



# AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

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## AMERICAN RAILROAD JOURNAL.

NEW-YORK, JULY 11, 1835.

We would call the especial attention of our readers to the annexed notice of a meeting held at Owego, in June, calling a RAILROAD CONVENTION, to be held in that place on the 28th of the present month, July. The importance of the object of the Convention, to wit, the *New-York & Erie Railroad*, will unquestionably command the attention of the inhabitants of this city, as well as other sections of the State, interested in its furtherance.

**RAILROAD MEETING.**—At a meeting of the inhabitants of the county of Tioga, convened at the Court House in the village of Owego, on the 13th June, 1835, to choose delegates to represent this county, in a convention to be held at the village of Owego on the 28th July next, to take into consideration the projected Railroad from New-York to Lake Erie,—the Hon. John R. Drake was chosen President, Theodore North and Geo. Fisher, Vice Presidents, and E. S. Sweet and James Dunn, Secretaries.

Resolved, That a committee of four be appointed to report nominations of suitable persons for delegates. The committee retired, and reported the following persons, who were unanimously appointed. From the Western Jury district, Theodore North, H. Luce, Wm. Maxwell, James Dunn, John Arnot, M. McReynolds, Hiram W. Jackson, E. Quinn, Charles Cook, J. G. McDowell, Jacob Westlake, C. Bennett, George Gardner.

From the Eastern Jury district, James Pumpelly, George Fisher, J. R. Drake, L. A. Burrows, Stephen Strong, Henry McCormick, S. B. Leonard, Saml. Baragar, G. H. Barstow, Wm. Ransom, Elijah Shoemaker, Thomas Pearshall.—[Owego Gazette.]

[From the Buffalo Com. Advertiser.]

**NEW LINE OF CANAL PACKETS.**—We have been quite remiss in omitting to notice this new enterprise. For about two weeks past, a line has been running between this city and Rochester, performing the distance in about half the time heretofore consumed in making the passage by the ordinary packets. The great augmentation of speed is obtained by constructing the boats on a new plan, in which swiftness is especially consulted. They are built considerably narrower than the common boats very sharp at the bows, and exceedingly light; and it is found that the same power necessary to impel the common packets at the rate of four miles an hour, will enable those of the improved construction to move with double the velocity.

The originator of this improvement is Captain Seth C. Jones, of Rochester, who has been some time of the opinion that a boat might be so constructed as to be drawn by horse power at the rate of ten or twelve miles an hour. He accordingly tried the experiment, and found his expectations fully realized. It is demonstrated that when moving at the rate of seven or eight miles an hour, these boats ride upon the swell created, and thus receive a constant onward impetus, instead of laboring at the base of the wave, pushing it forward, instead of surmounting it.

The tow boats plying between this city and Rochester, are the "S. C. Jones" and "Ohio," both of which are elegantly and tastefully fitted up,—one leaving every afternoon, for the present, at 5 o'clock, P. M.

As there is a regulation prohibiting the running of boats on the canal at a rate exceeding four miles an hour, for the prevention of injury to its banks by excessive agitation of the water, application has been made to the Canal Board for permission to run these boats at the rate of ten miles an hour—as the swell created by them at that velocity is not greater than would be caused by common boats, at the ordinary rate. Should this permission be granted, as there is every reason to anticipate, two additional boats, of larger size, will be immediately added to the line. Those now running, average between seven and eight miles the hour. It having been stated that they made the passage through by daylight, it may be proper to mention that it is contemplated to do it, as soon as permission is obtained to that effect.

Capt. Jones is now on a visit to the cities of New York, Baltimore, and Philadelphia, for the purpose of procuring the information necessary to enable him to construct a *sheet iron Packet Boat*, on the plan of those used in England; a model of which he intends bringing with him on his return, with a view of testing their practical adaptation to our own canal navigation. His enterprise is commendable and deserves success.

**QUICK CANAL PASSAGE.**—The Canal Boat Albany, Capt. Bromley, of the Transportation Line, made her last trip from Buffalo to this city, in four days and a half.—[Alb. Eve. Jour.]

[For the American Railroad Journal.]

## Foot Railroads.

It is proposed to show in this article, that railroads for short distances may be used to advantage by men to transport themselves and moderate loads by their own strength.

1. In showing this, I may first state the force of traction required on railroads. The force of traction is measured by a weight suspended to a cord passing over a pulley. The traction, or tractive power of a horse, is said to be 125 pounds, because a horse at his ordinary labor draws with a force sufficient to raise up 125 pounds by a cord over a pulley. The tractive power necessary to move waggons on common roads, and cars on railroads, has been very accurately ascertained. If a waggon with its load weighs 2400 pounds, then, if a weight of 200 pounds is suspended to a cord passing over a pulley, which cord draws the waggon, this weight would move the waggon forward on a good level turnpike road. But a car on a level railroad, weighing with its load 2400 pounds, would be moved forward by a weight of only ten pounds, suspended to a cord running over a pulley. If then a man could draw up a weight of ten pounds, he could, with the same rapidity that it ascends, move forward, on a level railroad, a car and its load weighing together 2400 pounds. If he could draw ten pounds up ten feet in a second, he could move the car and its load ten feet in a second; and if he could do this for an hour in succession, he could then move forward the car and its load 3600 feet in the hour. But if the railroad rises but 22 feet in a mile, the traction of 10 pounds will not move 2400 pounds up this ascent; but the traction of 10 pounds must be added, or the traction of 20 pounds will be needed; and if the ascent is 44 feet in a mile, another additional traction of 10 lbs. must be made, or there must be a traction of 30 pounds. The traction of 10 pounds, at 10 feet in a second, might be made to operate on a car 20 feet in a second; but the traction of ten pounds would not move a car weighing 2400 pounds 20 feet in a second, for it would propel only half the weight, or 1200; and if the traction of 10 pounds, at 10 feet in a second, were made to move a car 40 feet in a second, it would propel a car at this rate, weighing only 600 pounds. With the same power with which a weight of 2400 pounds is moved forward on a level railroad 3600 feet, a weight of

600 pounds might be propelled four times that distance, or 14,400 feet.

2. What now is the power ordinarily exerted by a laboring man? Different estimates are made of this power. By Dr. Farey, a recent writer on the steam engine, the power of man is assumed to be equal to the raising of 60 cubic feet of water, which is equal to 3750 lbs. avoirdupois, through the space or height of one foot in a minute. A stout laborer, says Dr. Farey, will continue to work at this rate during eight hours per day. The relative values of the labor of a man and a horse, as to physical strength exerted, are variously stated. Some estimate them as 1 to 5, some as 1 to 6, and some as 1 to 7. The efforts of men differ with the manner in which these efforts are employed. It has been estimated by Mr. Buchanan, that the same quantity of human labor employed in working a pump, turning a crank, ringing a bell, and rowing a boat, are as the numbers 100, 167, 227, 248. The strength of man could be applied in the most economical way on a railroad, and so as to act with even more efficiency than in rowing a boat. He might sit in a reclining posture like a man pulling an oar, with his feet pushing against the flat boards of a small wheel, and by his hands drawing upon the slats of a drum wheel, instead of drawing upon an oar, while the wheel on which his feet operate, and that on which his hands operate, act on the same working point. This machinery might occupy but about the space filled by two chairs, or very little more than is required by one man to sit at his ease.

Attempts have been made to construct carriages by which a man might propel himself on common roads; but a knowledge of the power of traction necessary on common roads, would show that this is wholly impracticable. If a man's weight is 175 pounds, it would require an additional tractive power of 144 to move himself on a common road, while this additional power would of itself alone move forward on a level railroad 3480 pounds; but for a man to move himself forward on a level railroad would require an additional traction of only two thirds of a pound, if his weight is 175 pounds.

If a laboring man ordinarily exerts strength sufficient to raise 3750 pounds 10 feet high in a minute, then he could propel 3750 pounds 240 feet in a minute, or half a mile in 12 minutes; or he could propel 937 pounds one mile in six minutes, or ten miles in an hour, and do this for eight hours in a day.

3. The attention may now be directed to the various occasions persons have to go, or to carry goods for short distances. Among the new and striking circumstances that in the city arrest the visitor from the country, is the throng of carts, and carriages, and horses, crowding the streets, and stunning his ears. This fact shows that there is a vast amount of conveyance of persons and loads from one part of a city to another. While such an amount of transportation is demanded by the necessities and convenience of the people of a city, it is manifest that railroads along some principal streets, reducing the freight of goods and persons to one tenth, or one third of its present cost, would be an immense gain to the community. The result would be that much mechanic business needed in a city would be done at a distance, where there was more room, and where on many accounts it could be done to more advantage. By the railroad the mechanic would be as near his customers four miles off, as he is now one

third of a mile. From a centre of business a man might transport himself with great ease several miles for his food and lodging, since, as easily as he would walk up stairs, or up a hill, 22 feet, with two pounds weight in his hand, he could move forward a mile on a level railroad, transporting himself, whatever is his weight, and moving his car also weighing 480 lbs. Or, supposing that it is about as fatiguing to a man to walk at the rate of three miles an hour, as to work for that time with the strength of a laboring man, then, as easily as he could walk one mile to his lodgings or home, he could propel himself and car, weighing together 625 pounds,  $\frac{1}{4}$  miles on a level railroad, and in the same time that he could walk a third of a mile. In the country an immense advantage would accrue from light and cheap railroads to centres of business, to get to stores, to physicians, to schools, to public lectures, and meetings, and to religious assemblies.

The influence of such means of communication on intellectual, moral, and religious improvement, I would set above all other advantages. The greatest mental and moral debasement is found in remote country neighborhoods, and in dark city lanes, and their deep cellars.

4. The position of places of business is ordinarily such that they can be accommodated to a great extent by level railroads. Cities are commonly built on navigable waters; and the business in them is done along a water line, and here are ranged the workshops and stores. Railroads from the country will naturally terminate on this level, for they must be kept on low ground, and in the valleys of streams, which keep the lowest and most level courses. The railroads from Providence and Worcester terminate in Boston at what was once the neck, from whence very level rail paths might extend to the principal wharves, and indeed around the whole city. Rail tracks, extending from the termination of these railroads over the city, would greatly promote the success of the railroads, for, on a level track, a horse might draw several cars and loads, weighing together 12 tons. A car might receive the passengers directly from the steamboat, or travellers might enter one at their hotel, and without being delayed by the long process of getting seated at the head of the railroad, the cars, all loaded, might meet almost at the minute from different quarters, and pursue their course without hindrance.

Slight and cheap lines of railroad for the application of human power, intersecting the city and country, will accommodate especially the great body of the middling and poor classes, and may thus do as much good as the grand and heavy railroads, on which the ponderous cars of three and four tons weight are rolling; and they may add vastly to the business of these main channels of communication. If there are to be conveyed loads of 50, 100, 200, or 500 pounds, porters could convey them as easily on their light cars on rail tracks, as they could walk on a common road without any burden. To draw a load of 480 lbs. a man has to exert only the power that would raise two pounds over a pulley; and to move himself also on his load, he would have to exert only the additional tractive power of one third of a pound. The effect of cheap rail tracks would be as though a railroad terminated at each man's door.

By these facilities of communication, both the country and the town would be benefited. Labor is nearly double in the city what it is in the country; and this is a loss to

the laborer and the employer. It is a loss to the employer, because the labor he gets costs him so much; and it is a loss to the laborer, because his expenses are great and his accommodations poor. It is a loss also to the laborer in the country, because he cannot get the products of his labor to market without losing a great part of their value. The expense of transportation is a dead loss to the public; and by how much this expense is reduced, by so much is the whole public benefitted.

PUBLICOLA.

*Experiments on the Transverse Strength and other Properties of Malleable Iron, with Reference to its Uses for Railway Bars.* By PETER BARLOW, F. R. S., Cor. Mem. Inst. of France; of the Imp. and Roy. Acad. of Petersburg and Brussels, etc.

(Continued.)

Collecting the results of these seven experiments, (see opposite page,) and reducing them all to square inches, we find that the strain which was just sufficient to balance the elasticity of the iron, was in—

Bar, No. 1.	(re-manufactured iron);	10 tons.
" 2.	ditto	11 "
" 3.	New Bolt	11 "
" 4.	ditto	10 "
" 5.	(re-manufactured)	9.5 "
" 6.	ditto, from old furnace bars,	8.25 "
" 7.	New bar, by Messrs. Gordon,	10 "

We may consider, therefore, that the elastic power of good iron is equal to about ten tons per inch, and that this force varies from ten to eight tons in indifferent and bad iron. It appears, also, (considering .000096 as representing in round numbers  $\frac{1}{1000000}$ th,) that a bar of iron is extended one ten-thousandth part of its length by every ton of direct strain per square inch of its section; and consequently, that its elasticity will be fully excited when stretched to the amount of one-thousandth part of its length.

*Remarks on the foregoing Experiments.*

These results have an important bearing on the question of railway bars. We shall see, in the following section, how they become applicable to the investigation of the transverse strain; but, at present, I shall only speak of them as they apply to the fixing of the rail to the chair. Amongst the numerous models which the Directors did Messrs. Rastrick, Wood, and myself, the honor to submit to our inspection, for the purpose of awarding their prize, there were several in which it was intended to fix the rail permanently to the chair—a very desirable object, if it could have been safely adopted; and it was the want of data to enable us to decide on this point, which first led me to propose this course of experiments. The question is now satisfactorily answered. We have seen that, with about ten tons per inch, a bar of iron is stretched  $\frac{1}{1000000}$ th part of its length, and its elasticity wholly excited or surpassed. Again, admitting  $76^{\circ}$  to be the extreme range of the thermometer in this country between summer and winter, it appears, from the very accurate experiments of Professor Daniell,\* that a bar of malleable iron will contract with this change  $\frac{1}{1000000}$ th part of its length. And hence it follows, that if the rails were permanently fixed to the chair in the summer, the contraction in the winter would bring a strain of five tons per inch upon the bar, and a strain of twenty-five tons upon the chair, (the bar being supposed of five-inch section,) thereby deducting from the iron more than, or

\* See Phil. Trans. 1831.

Experiments on the Longitudinal Extension of Malleable Iron Bars, under different Degrees of direct Tension.

TABLE I.

Bar No. 1, 1 inch square. February 21st.			Bar No. 2, 1 inch square. February 21st.		
Weight in Tons.	Index Readings.	Parts of the whole Bar extended by each Ton.	Weight in Tons.	Index Readings.	Parts of the whole Bar extended by each Ton.
2	zero		2	zero	
3	0025	0000625	3½	11	0000733
4	156	0000935	4	15	0000800
5	285	0001090	5	24	0000900
6	375	0001100	6	35	0001100
7	not observed	mean.	7	44	0000900
8	562	0000935	8	52	0000800
9	not observed	mean.	9	62	0001000
10	750	0000940	10	70	0000800
11	875	0001250	11	81	0001100
			12	113	{ Elasticity } { injured. }

Bar No. 3, 1 inch diameter. February 23d.			Bar No. 4, 1 inch diameter. February 23d.		
Weight in Tons.	Index Readings.	Parts of the whole Bar extended by each Ton.	Weight in Tons.	Index Readings.	Parts of the whole Bar extended by each Ton.
1	zero		1	zero	
2	16	0001600	2	15	0001500
3	31	0001500	2	28	0001300
4	44	0001300	4	42	0001400
5	56	0001200	5	56	0001400
6	67	0001100	6	69	0001300
7	79	0001200	8	79	0001000
8	91	0001200	7	97	0000800
9	103	0001200	9	116	{ Elasticity } { destroyed }

Mean extension per ton, per square inch,

Bar No. 1. 0000982  
No. 2. 0000903  
No. 3. 0001010  
No. 4. 0000976

Mean of the four . . . . 0000967

TABLE II.

Bar No. 5, 2 inches square. February 28th.			Bar No. 6, 2 inches square. February 28th.			Bar No. 7, 2 inches square. March 7th.		
Weight in Tons.	Index Readings.	Parts of the whole bar extended by each 4 tons.	Weight in Tons.	Index Readings.	Parts of the whole bar extended by each 4 tons.	Weight in Tons.	Index Readings.	Parts of the whole bar extended by each 4 tons.
4	zero		4	zero		4	zero	
6	100		6	090		6	065	
8	180	000180	8	150	000150	8	125	000125
10	240	000140	10	210	000120	10	175	000110
12	290	000110	12	250	000100	12	230	000050
14	350	000110	14	290	000080	14	280	000050
16	400	000110	16	335	000085	16	335	000050
18	450	000110	18	375	000080	18	385	000105
20	500	000100	20	410	000075	20	435	000100
22	550	000100	22	445	000070	22	480	000095
24	600	000100	24	485	000075	24	530	000095
26	650	000100	26	525	000080	26	575	000095
28	695	000095	28	565	000080	28	625	000095
30	740	000090	30	620	000095	30	670	000095
32	790	000095	32	660	000095	32	715	000090
34	825	000085	34	730	000110	34	755	000085
36	860	000075	36		{ Full }	36	805	000090
38	920	000095	38		{ elasticity. }	38	850	000095
40	105	000145	40			40	900	000095
		{ Elasticity } { destroyed. }						{ Elasticity } { perfect. }

Mean extension per ton, per square inch,

No. 5. 0001032  
No. 6. 0000957  
No. 7. 0000841

Mean . . . . . 0000946  
Mean of preceding Table 0000967

full half, its strength, and submitting the chair to a strain very likely to destroy it. Every proposition, therefore, for permanently attaching the rail to the chair is wholly inadmissible.

These remarks may also be carried still farther. If it be dangerous to attach the rail *directly* to the chair, it must be bad in practice to affix it *indirectly* by wedges, cotters, or otherwise, beyond what is absolutely essential to give it steadiness under the passing load; for it is evident, that if by these means we could prevent any motion taking place, we should fall into the same evil as by the permanent attachment; and if, as most probably will happen, we fail of entirely accomplishing this, still all the friction which is produced must be overcome by the contracting force of the iron, and be so much strength deducted from its natural resisting power.

The problem, therefore, which engineers have to solve, is, "To find a mode of fixing the rail to the chair, which shall give sufficient steadiness to the former; but which, at the same time, shall produce the least possible resistance to the natural expansion and contraction of the bar."

The quantity of motion which thus takes place is certainly but small, viz. about 1/4th of an inch between summer and winter, with a fifteen-foot bar; but the force of contraction is great, amounting to five tons per sectional inch for the annual extremes, and frequently to not less than two and a half tons between the noon and night of our summer season, while the whole power of iron within the limits of its elasticity does not exceed nine or ten tons.

This is an important consideration, and for want of attention to it, or rather, in consequence of its amount not having been ascertained, a practice of wedging or fixing the rails has prevailed, which must necessarily have been the cause of great destruction to the bars.

I would also suggest, here, as a matter deserving the attention of practical men, that as the bar must necessarily contract, it will draw from that side, which is least firmly fixed, and hence all the shortening will most probably be exhibited at one end, however slight the hold on either may be; and when it happens that the adjacent ends of two bars both yield, the space between the two is rendered double that which is necessary. To avoid this evil, one of the two middle chairs in each bar might be permanently attached to the rail, in which case the contraction must necessarily be made from each end, and the space occasioned by the shortening of the bars would then be uniform throughout, and much unnecessary and injurious concussion thus saved both to the rail and to the carriage.

Experiments to determine the comparative Resistance of Malleable Iron to Extension and the Compression, and the position of the neutral axis in bars submitted to a transverse strain.

Let A B (see figure 1, on the following page) represent an iron or any other bar supported at A and B, and loaded in the middle by a weight W, which deflects it; extending the fibres between n and c d, and compressing those between n and c' d'. Now, supposing the system in equilibrium, W acting at the extremity of the 1/2 length, or 1/2 W, is equivalent to the sum of all the resistances to extension in n c d, and to all those of compression in n c' d, each fibre acting on a lever equal to its distance from the neutral axis n. Consequently, as the quantity of extension of any fibre is as its distance from the neutral axis, and the

Fig. 1.

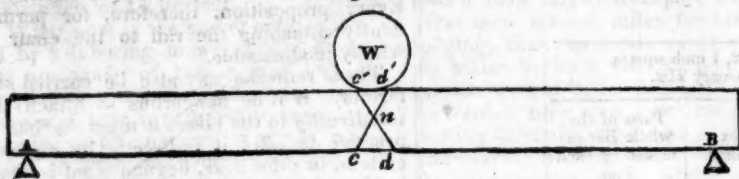
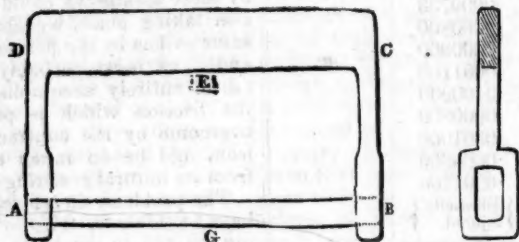


Fig. 2.



lever by which it acts, being also as that distance, the actual resistance of a fibre at the distance,  $x$ , is as  $\frac{x^2 t}{d'}$ ,  $t$  being the tension of the lower fibre, and  $d'$  its depth below the neutral axis; and the sum of all these resistances will be  $\int \frac{x^2 t}{d'} dx = \frac{1}{3} d' t$ , (when  $x=d'$ ) or for the whole depth. In the same way,  $c$  being taken to denote the compression of the upper fibre, corresponding to the tension  $t$ , the sum of all the compressions will be,

$\frac{1}{3} d''^2 c$ ,  $d''$  denoting the depth of compression; hence the whole sum is,

$$\frac{1}{3} d''^2 c + \frac{1}{3} d' t = \frac{1}{4} W l;$$

but  $d'' c = d' t$ ,\* the quantity of resistance being equal to that of extension; this, therefore, becomes

$$\frac{1}{3} d'' d' t + \frac{1}{3} d' t = \frac{1}{4} l W, \text{ or}$$

$$\frac{1}{3} (d'' + d') d' t = \frac{1}{4} l W, \text{ or}$$

$$\frac{1}{3} d' d' t = \frac{1}{4} l W;$$

$d$  being the whole depth, and  $d'$  the depth of tension; whence,

$$d' = \frac{3 l W}{4 d a b} = \text{depth of tension, and}$$

$d - d'$  the depth of compression,

consequently,  $\frac{d'}{d - d'}$  the ratio, in which the neutral axis divides the sectional area in rectangular bars.

#### Comparison of the Formula with Experimental Results.

In order to submit this formula to practical results, a strong iron frame was forged, of the form shown above, (see figure 2;) D C is thirty-six inches long, six inches broad, by two deep; the two arms two inches square, and the ends of proportional

\* To prevent misapprehension, it may be proper to observe that  $c$  here is not intended to represent the force requisite to compress a fibre the same quantity that the force  $t$  extends it; but simply, the force of the compression at  $c$ , corresponding to the tension  $t$  on the lower fibre. The equation, therefore,  $d'' c = d' t$  is equivalent to saying that the sum of all the forces in  $a' c d$  is equal to all the forces in  $a c d$ ; or that  $a g = a' g'$ ;  $a, a'$  denoting the areas, and  $g, g'$  the distances of the centres of gravity from  $n$ , and taking  $n t$  to denote the force which will compress a fibre to the same extent as the force  $t$  will extend it.

dimensions to those represented. The other view of the arms is represented in the side figure, with an opening six inches by three, in which the bars for experiment were placed, as represented by A G B; the space between is thirty-three inches. The shackles were applied at E and G, and connected by strong iron cables to the press; the strain was then brought on and the results recorded.

In order to measure with every requisite accuracy, the deflections which the bar sustained, as different weights were applied, an instrument of the form shown in the annexed figure was neatly and accurately



made in iron, having two feet, A D, B C; the centre was tapped to receive the brass screw, H S, of twenty threads to the inch, and the head was divided into five equal parts, and by again subdividing these divisions into ten, a deflection of  $\frac{1}{1000}$  of an inch might be measured with great ease.

The method of applying it was to rest its feet on the bar, and then to retain it in its place by cramps and screws. The micrometer screw was then run down till it was in contact with the bar, and the divisions read and registered, either before any strain was on, or when the first slightest strain could be estimated, as stated in the following table.

Experiments made to ascertain the Deflections due to different Transverse Strains, and the Weight which first produces a Strain equal to the Elastic Power, and thence the position of the Neutral Axis.

TABLE III.

PART 1. BAR NO. 5.		
Bearing 33 Inches. 2 Inches Square.		
Weight in Tons.	Readings by Scale.*	Deflections for each Half Ton.
No Weight.	1.96	
.875	1.92	.023
1.00	1.90	
1.50	1.90	.016
2.00	1.88	.020
2.50	1.86	.020
Weight removed.	} returned to	
3.00	1.80	
Weight removed.	} 1.88 } Elasticity injured.	

\* In the first of these experiments the deflections were measured by a scale in front of the bar, the micrometer screw not being ready.

## PART 2. BAR NO. 5.

Bearing 33 Inches. 2 Inches Square.

Weight in Tons.	Readings by Scale.	Deflections for each Half Ton.
No Weight.	1.95	
.750	1.92	.020
1.00	1.91	.020
1.50	1.89	.020
2.00	1.86	.030
2.50	1.84	.020
Weight removed.	} returned to	
3.00	1.95	
Weight removed.	} 1.81 } Elasticity injured.	

## PART 1. BAR NO. 6.

Weight in Tons.	Readings by Scale.	Deflections for each Half Ton.
No Weight.		
.50	1.56?	
1.0	1.50	
1.5	1.48	.020
2.0	1.45	.030
2.5	1.24	.210 } Elasticity injured.
3.0		

## PART 2. BAR NO. 6.

Weight in Tons.	Readings by Micro. Screw.	Deflections for each Half Ton.
No Weight.	.025	
.50	.043	.018
1.0	.068	.025
1.5	.091	.023
2.0	.128	.037 injd.
2.25	.178	.100
2.50	.313	.185

## PART 1. BAR NO. 7.

Weight in Tons.	Readings by Micro. Screw.	Deflections for each Half Ton.
No Weight.	.031	
.50	.053	.022
1.0	.077	.024
1.5	.096	.019
2.0	.126	.030
2.5	.147	.021
3.0	.211	.064 injd.

## PART 2. BAR NO. 7.

Weight in Tons.	Readings by Micro. Screw.	Deflections for each Half Ton.
No Weight.	.025	
.50	.056	.031
1.0	.077	.021
1.5	.098	.021
2.0	.109	.011
2.5	.137	.028 injd.
3.0	.180	

## PART 3. BAR NO. 7.

Weight in Tons.	Readings by Micro. Screw.	Deflections for each Half Ton.
No Weight.	.075?	
.50	.130	
1.0	.153	.023
1.5		.023
2.0	.199	.023
2.5	.220	.021
3.0	.290	.070 injd.

## PART 2. BAR NO. 7.

Reversed.		
Weight in Tons.	Readings by Micro. Screw.	Deflections for each Half Ton.
No Weight.	.025	
.10	.054	.029
1.0	.092	.038
1.5	.153	.061
2.0	.235	.082

Elasticity clearly injured by the former experiment.

The first six experiments were made on different parts of the bars, Nos. 5, 6, and 7, without cutting them, by introducing them into the iron frame above described (having thirty-three inches clear bearing,) and straining them till the successive deflections showed a tendency to increase in amount, which was taken as a sign of the elasticity being injured; and the amount of this strain having been previously ascertained by the former experiments, they furnish the best possible data to apply to the formula for determining the position of the neutral axis.

It appears from these experiments, that both parts of the Bar No. 5, (whose direct elasticity was 9.5 tons,) had their restoring power just preserved with a transverse strain of two and a half tons on a bearing length of thirty-three inches. Hence in the formula:

$$d' = \frac{3lw}{4dat}$$

we have  $l=33$ ,  $w=2\frac{1}{2}$ ,  $d=2$ ,  $a=2$ ,  $t=9.5$ , and  $d'=1.62$  inches, depth of tension.

Consequently  $d'=38$  inches, depth of compression, and the ratio of the area of compression to tension 1:4.3

In the first part of Bar No. 6,  $w$  is not quite 2 tons, and  $t=8.5$  tons; and hence the ratio 1:2.7

In the second part of the same bar, ditto 1:2.7

In the first, second, and third parts of Bar No. 7,  $w=2\frac{1}{2}$  tons, and  $t=10$  tons 1:3.4

As far as these experiments are authority, therefore, the neutral axis divides the sectional area of a rectangular bar in about the ratio of one to three and a half.

In the following experiments, the iron was all supplied by Messrs. Gordon, and was of the same quality as the Bar No. 7,—its elasticity may therefore be taken as ten tons, but it was not determined by testing, as in the preceding experiments.

TABLE IV.  
BAR No. 8.

Distance of bearing.	Breadth.	Depth.	Weights.	Deflections.	Deflections each 1 Ton.	REMARKS.
in.	in.	in.	tons.			
33	1.9	2	.125	.034		
			.250	.046		
			.500	.060		
			1.00	missd.	.019	
			1.50	.098	.019	Mean .024 $w=2.25$ . Neutral axis 1:3.4 Elas. inj. with 2.50 T
			2.00	.120	.022	
			2.25	.134	.028	
			2.50	.151	.034	
			2.75	.176	.044	

BAR No. 9.

33	1.9	2	.250	.047	.016	Mean .021 $w=2.25$ . [Neutral axis 1:3.4 Elas. injd. with 2.50 Ditto dest. with 3.00
			.500	.055	.022	
			1.00	.077	.020	
			1.50	.097	.026	
			2.00	.123	.018	
			2.25	.132	.026	
			2.50	.145	.038	
			2.75	.164	.092	

BAR No. 10.

33	1.9	2	.500	.056	.020	Mean .024 $w=2.5$ . Neutral axis 1:4.2
			1.00	.076	.019	
			1.50	.095	.029	
			2.00	.124	.027	
			2.50	.151		

Deductions from the three last Experiments, confirmed by direct Observation of the place of the Neutral Axis.

These experiments, like the former, imply, according to the formula, that the neutral axis lies at about one-fourth or one-fifth of the depth of the bar from its upper surface; but a method was adopted in these to discover, if possible, its position mechanically. With this view, a keyway, or groove, was cut in the side of the bar one inch broad, and one-tenth of an inch deep,—thus reducing the breadth to 1.9 inches. To this keyway, or groove, was fitted a steel key, which might be moved easily; and when the strain was on, the key was introduced, which it was expected would be stopped at the point where the compression commenced, and this was accordingly found to be the case in two out of the three bars, but not in the third, the fitting not being sufficiently accurate. The other two, however, showed obviously a contraction of the groove, at about half an inch from the top, agreeing with the preceding computations. To make the results more certain, three other bars, exactly like the former, had deeper grooves cut, and the key more exactly fitted, and with these the results were as definite as could be desired. The key, as above-stated, moved smoothly and easily before the experiment; but when two tons strain were on, and the key applied, it was stopped, and stuck at a definite point. The strain being then relieved, the key fell out by its own weight; the strain was again put on, the key sticking as before; the strain being relieved, the key again fell, and so on, as often as repeated. Precisely the same happened with all the three bars. One of them was then reversed, so that the part which had been compressed was now extended, and exactly the same result followed: showing, most satisfactorily, that our former computed situation of the neutral axis was very approximate. The measurements obtained in these experiments being tension 1.6, compression .4 giving exactly the ratio of 1 to 4 in rectangular bars. These results seem the most positive of any hitherto obtained; still, there can be little doubt this ratio varies in iron of different qualities; but looking to the preceding experiments, it is probably always between 1 to 3, and 1 to 5.

On the Stiffness of Rectangular Iron Bars, and their Deflections under different Weights.

Although it is necessary to know the actual resisting power of bars in their ultimate state of strain, in order to determine the relative strengths of differently-shaped bars, yet the question of most practical importance is the stiffness they exhibit when loaded with smaller weights; for we ought never to strain a bar so nearly to its full power of bearing, as to make this the immediate subject of inquiry.

The experiments recorded in the last section are applicable to this purpose, but as these are all of the same depth, it was thought more satisfactory to make a few other experiments on bars of different breadths and depths. They were performed precisely like the last, and therefore require no particular description.

To reduce the law of deflection from these results, we may have recourse to two well known and well established formulæ: viz.

$$\frac{lw}{4ad^2} = S \text{ and } \frac{l^3w}{ad^3\delta} = E,$$

which are both constant quantities for the same material,  $w$  being the greatest weight

Experiments on the Deflection of Malleable Iron Bars, under different Strains.

TABLE V.  
BAR No. 11.

Distance of bearing.	Breadth.	Depth.	Weights.	Deflections.	Deflections each 1 Ton.	REMARKS.
in.	in.	in.	tons.			
33	1.5	3	.125	.043		
			.500	.059		
			1.00	.074	.015	Mean .0103
			1.50	.083	.009	
			2.00	.095	.012	
			2.50	.101	.006	
			3.00	.109	.008	
			3.50	.120	.011	
			4.00	.131	.011	
			4.50	.148	.017	$w=4\frac{1}{2}$ . Neutral axis 1:4.9 Elas. pres. at 4\frac{1}{2} tons.

BAR No. 12.

33	1.5	3	0	0		Mean .0108 $w=4\frac{1}{2}$ . Neutral axis 1:4.9 Elasticity injured.
			.50	.017		
			1.00	.037?		
			1.50	.052	.015	
			2.00	.061	.009	
			2.50	.064	.003	
			3.00	.078	.014	
			3.50	.089	.011	
			4.00	.102	.013	
			4.50	.124	.022	

BAR No. 13.

33	1.5	2.5	0	.006		Mean .0173 $w=3$ . Neutral axis 1:4.9 Elasticity preserved, 3 tons.
			.50	.003	.024	
			1.00	.050	.020	
			1.50	.060	.010	
			2.00	.074	.014	
			2.50	.093	.019	
			3.00	.110	.017	
			3.50	.149		
			7.5	Bent 8	inches	

the bar will bear without injuring the elasticity; consequently, when  $l$  is also the same in both,  $d\delta$  will be also constant,  $a$  being the breadth,  $d$  the depth, and  $\delta$  the deflection. That is, all rectangular bars having the same bearing, length, and loaded in their centre to the full extent of their elastic power, will be so deflected, that their deflection ( $\delta$ ) being multiplied by their depth ( $d$ ) the product will be a constant quantity, whatever may be their breadths or other dimensions, provided their lengths are the same.

Let us see how nearly our several results agree with this condition.

In the several bars, Nos. 8, 9, 10, 11, 12, 13, multiplying the mean deflection for each half ton, by the number of half tons which excited its whole elasticity, and this again by the depth of the bar, we find

	Depth.
No. 8, ultimate deflection	$.108 \times 2 = .2160$
No. 9	$.094 \times 2 = .1880$
No. 10	$.120 \times 2 = .2400$
No. 11	$.0876 \times 3 = .2628$
No. 12	$.0918 \times 3 = .2754$
No. 13	$.1038 \times 2\frac{1}{2} = .2595$

6) 1.4417

Mean . . . . . 2.2403

There is rather a large discrepancy in bar No. 9; the others are as approximate to the mean as can be expected in such cases.

If we make the same trial on the three parts of bar No. 7, we have,

1st part 116	×	2	=	2320
2d part 105	×	2	=	2100
3d part 115	×	2	=	2300

3) 6720

Mean	-	-	-	2240
Former Mean	-	-	-	2403

2) 4647

General Mean - - - 2323

We may therefore say, that any malleable iron bar, of 33 inches bearing, being strained to its full elasticity, will be so deflected, that its depth, multiplied by the deflection, due to 30 inches, will produce the decimal .23; consequently  $\frac{23}{d}$  = the deflec-

tion,  $d$  being the whole depth in inches.

In this form, however, it applies only to rectangular bars. To make it general, we must estimate it from the neutral axis, which in rectangular bars, being  $\frac{1}{4}$ th of the depth below the upper surface, the above constant, when thus referred, becomes  $2323 \times \frac{3}{4} = 1858$ . But, on the other hand, our instrument for measuring the deflection was but 30 inches long; it has therefore to be increased again in the ratio  $30^2 : 33^2$ , or as  $10^2 : 11^2$  on this account; so that, ultimately, the formula is  $d' = .22 d'$  denoting now the depth of the bar below the neutral axis, and in this form it is general for parallel rails of any section whatever.

A curious circumstance was observed in these experiments, which, although it has no immediate bearing on the subject in question, it may be well to notice, and which is, I apprehend, characteristic of good malleable iron, viz. that the resistance to compression, although so much greater than the resistance to extension, is the first of the two which loses its restoring power; for if we so far increased the strain as to overcome the elastic power, the point of compression descended to nearly the middle of the depth, proving that the tensile force, although so much less, is the most tenacious; whereas I suspect, that in cast iron it is the reverse, that is, it is here the tensile power which first yields, and the consequence is a sudden fracture, and momentary destruction of the bar.

**WASHINGTON AND BALTIMORE RAILROAD.**—Earlier than we anticipated, the Railroad between this city and Baltimore is about to be brought into use, to the great joy, no doubt, of all who have need to go to and from Washington in a direction north of it. On Wednesday, the President and directors, with the principal officers of the Washington and Baltimore Railroad Company, accompanied by several invited citizens of Baltimore, made a trip of inspection on the new road, from Baltimore to Bladensburg, at which place the company was met by the Mayor of this city and some other gentlemen who take much interest in the success of that great undertaking. We are gratified to learn from one of our citizens who travelled the whole way from Baltimore in the car, (which was drawn by a locomotive engine,) that the greatest satisfaction was expressed at the manner in which the road has been constructed. The rails are of an improved construction, and greatly superior to any heretofore in use. The engine is of great power, and of the most approved construction, and the cars destined for this road superior to any heretofore in use, containing comfortably, within the body of each, sixty passengers.

The company would have been able to have opened the road through to their terminus in this city, but for the unaccountable delay in the arrival of a cargo of rail-iron, which did not sail from England until the 16th May, instead of the middle of April, as ordered.

We are pleased to learn that an arrangement has been made by the enterprising stage company of G. Beltzhoover & Co. with the Railroad Com-

pany, to open the road on Wednesday next; the passengers, until the final completion of the road to the canal basin in this city, to be conveyed from Bladensburg to the city in stage coaches. So that a person may hereafter go and return between Washington and Baltimore in less time than, when travelling at the fastest rate, it used to take to accomplish the single distance between the two cities. —[Nat. Int.]

The Baltimore Gazette furnishes us with the following remarks and report, which will afford pleasure to all our readers who take an interest in the progress and permanence of that Herculean work, the Baltimore and Ohio Railroad.

In reference to the Baltimore and Ohio Railroad, we have frequently taken occasion to remark upon the substantial and permanent manner in which the buildings, and all the other operations of that company have been constructed. We have uniformly approved of this policy, which, we are still satisfied, will in the end be found most economical and beneficial to the stockholders. Having understood that a thorough inspection had recently been made, of all the masonry on the road, we called at the office of the company and requested to see the report on this important part of the work. This permission was readily granted to us, as well as the liberty to publish the report if we desired to do so. Considering the information it discloses to be of deep interest to a large number of our readers, we now submit the same as follows:\*

Engineer's Office,  
Baltimore and Ohio Railroad, June 20, 1835. }  
To PHILIP E. THOMAS, Pres't. &c.

I have now the honor to enclose a report dated the 19th inst., made to me by Robert Wilson, Assistant Superintendent of Masonry, relative to the condition of the masonry and bridges upon the Baltimore and Ohio Railroad between this city, Frederick, and Harper's Ferry, comprising a distance of about 85 miles.

This examination has been made in pursuance of the letter of instructions to me, dated the 24th of October last. The delay of this inspection of the masonry from the autumn, until the spring season, was the result of imperative calls upon my time in the railroad service, and as these circumstances are all familiar to thee, I need now only remark, that finding it wholly impossible to give my personal attention to the examination, I confided, with my verbal permission, the service to Robert Wilson, Assistant Sup't of Masonry in the service of the Company, in whom I have full confidence. His report now presented, and already referred to, is highly satisfactory, as showing the good condition and great permanency of the mason-work upon the entire line of railroad already completed to Frederick, and to Harper's Ferry, the repairs required and recommended being only to the amount of one hundred and eighty dollars.

As these repairs have been deemed necessary, I recommend that they be made without delay, under the inspection of Robert Wilson.

In confirmation of the opinions which this officer has expressed, I may add, that I have heretofore frequently inspected the mason work upon the whole line, and likewise upon the Washington Railroad, and am of opinion that it has been most faithfully executed, and of materials of the most

\*It should be recollected that a considerable portion of this masonry has been built more than 4 years.

substantial character; and I do not hesitate to add, that I know of no public work of internal improvement in this country involving so much masonry of a character so substantial.

J. KNIGHT,  
Chief Engineer B. & O. Railroad.

BALTIMORE, June 18th, 1835.

Jonathan Knight, Esq.

Chief Engineer B. & O. R. R.

Sir:—Your letter of the 2nd May, 1835, has been received, requiring me to make a minute examination of the masonry on the line of the Baltimore and Ohio road, from its commencement to its termination at Harper's Ferry, together with the actual situation of the wooden viaduct over the Monocacy, and report thereon respectively.

Pursuant to your instructions, those examinations have been carefully made, and it is with much satisfaction I am enabled to state that the masonry on the entire line, with few exceptions, which I will hereafter designate, is of the most permanent character, so much so, that with slight occasional repairs it will endure for ages.

The following statement shows where and what repairs are necessary, and their probable cost, viz:

4th mile Bridge Gwynn's Run—	some pointing wanted,	cost \$4
Culvert No 2, part of paving to be renewed,	" "	" 2
7th mile, Culvert No. 4, south apron requisite,	" "	" 6
" Bridge, No. 1, pointing, do.	" "	" 4
8th mile, " 2, Gadsby's run, pointing requisite,	" "	" 10
" Bridge, No. 1, Dorsey's run, do	" "	" 2
11th mile, Bridge No. 2, Ellicott's field, pointing wanted,	" "	" 2
" Bridge, No. 3, paving and pointing,	" "	" 116
13th mile, Culvert No. 1, apron wanted,	" "	" 3
14th " " 11, paving near south end,	" "	" 3
67th " " 2, three cap stones broken, but no repairs now necessary.	" "	"
72d " " 3, poplar branch, paving and pier to be repaired,	" "	" 6
72d " Bridge No. 1, sugar tree branch, end of south wing requires repaving,	" "	" 15
" " No. 2, Great Catoc-tin, pointing necessary,	" "	" 2
76th mile, Bridge No. 1, Clagett's branch,	" "	" 2
77th " Culvert No. 2, pier to be repaired,	" "	" 3

\$180

making together \$180 as the aggregate costs of all the repairs deemed necessary to place the masonry in a sound condition, which allowance, it is confidently believed, is amply sufficient to effect the purpose, provided the work be executed under the direction of the supervisors on the road. It is proper to remark that the greater part of these repairs might be at present dispensed with, as, for instance, the pointing of the several viaducts, together with the paving of viaduct No. 3, on the 11th mile: I would, however, recommend that all the repairs mentioned be now made.

59th mile—the Monocacy viaduct on this mile appears in good order, except that a slight repair to the weatherboarding on the north side is necessary.

Respectfully submitted,

ROBERT WILSON,  
Ass't. Sup't. of Masonry.

**BOSTON AND WORCESTER RAILROAD.**—On Friday last, the locomotive engine and passenger car, for the first time passed over the whole of this road from this city to Worcester. The Directors, and a number of other gentlemen, left this city at half-past 2 o'clock, with one of the engines, and after viewing the whole extent of the road—stopping three times by the way—once as much as fifteen minutes, they arrived at the termination of the road on Main street, in Worcester, at a quarter past 5. After a stay there of near an hour they set out on their return, and would have made their passage to Boston, exclusive of two short stops at Westborough and Needham, in two hours, had not their process been interrupted in Newton, by an accident which had happened to the engine of the regular afternoon train, and detained it on the road. The forward axle of the engine was broken, and it was necessary to remove the engine from the road, and to bring the whole load, consisting of about twelve cars, with a very large number of passengers, into town with one engine. In consequence of this accident, the train did not reach town until after ten o'clock.

On Saturday, the 4th instant, the four engines on this road, in conformity with the notice previously given, made each four trips between Boston and Worcester; two engines with eleven cars leaving each end of the road at the same time, at intervals of four hours, and conveying, during the day, more than fifteen hundred passengers. Each engine (with the exception of one which omitted one trip) and car travelled 176 miles in the course of the day, generally with full loads, and no accident or detention occurred during the day.

An instance of despatch, in the workshop of the corporation, deserves to be mentioned to the credit of the mechanics employed. In consequence of the accident above mentioned, to one of the engines on Friday evening, the engine was not hauled into the depot until 12 o'clock at night. The axle was then repaired, and the engine took her place on the road at 6 o'clock in the morning.

The Directors and Stockholders of the corporation and other gentlemen to the number in all of nearly three hundred, will proceed to Worcester to-day, in celebration of the opening of the railroad, having been invited to partake of a collation, by the citizens of that place.—[Boston D. Advertiser.]

Extract of a letter received by a commercial house in this city from their correspondent at Apalachicola, dated 25th June.—“Books of subscription for the capital stock of the Lake Winico and St. Joseph's Canal Company, were opened a few days since, the whole of which was immediately taken. The object of this Company is to connect the waters of the river Apalachicola with the Bay of St. Joseph's by a Canal or Railroad. The latter has been decided on for the present. The Bay of St. Joseph's is decidedly the best harbor in the Gulf of Mexico, having twenty-two feet on the bar at low tide and of easy access. It is fifteen miles in length, and from four to six in width, and will no doubt prove healthy, as there is no fresh water emptying into it—surrounded by a beautiful sand beach, and free from those marshes and stagnant water, the fruitful sources of disease in our Southern bays. The consequence, which may grow out of the successful completion of this work, it is impossible to foretell. By reference to the chart of the coast, made under the direction of General Bernard, you will find that these short cuts, less than twenty miles in all, will open an inland steamboat navigation from the Mississippi to St. Joseph's. The Company have purchased five sections of land in St. Joseph's, and are laying off a town on a beautiful elevated plain, about half way up the Bay. The lots will be brought into the market early in the Fall. Every exertion will be used to have the road, wharves, depots, &c. finished in time for the transportation of the crop. The distance from the head of the steamboat navigation on Lake Winico, to the site selected for the town in St. Joseph's, is a fraction less than six miles, and passes over a level pine wood country, affording the choicest timber for the road, right on the spot. The Company have acted wisely in the distribution of the stock. Three eighths have been transferred to the merchants of Columbus, Georgia; one fourth to gentlemen in Tallahassee; and the remainder is retained by the present citizens of Apalachicola. The latter are making preparations to remove en masse to St. Joseph's, and already a number of store houses, and one extensive tavern have been contracted for.—[Journal Commerce.]

The resolutions of the Canal Board, respecting the enlargement of the Erie Canal and its locks, will be found in our columns to-day. The doubling of the locks is, it will be seen, to be set about immediately. The enlargement of the canal cannot be undertaken until enough is in hand, from the revenues of the canal, to extinguish the existing debt. Meantime, however, surveys, &c., are to be made.

[From the Albany Argus.]

**ENLARGEMENT OF THE ERIE CANAL.**—The great increase of business on the Erie Canal, and the rapid settlement of the country seeking a market through that channel, having demonstrated the importance of enlarging and improving the canal, an act authorizing the work was passed at the last session of the Legislature. The Canal Commissioners were directed to commence the enlargement of the canal and the construction of a double set of lift locks, “as soon as the Canal Board may be of opinion that the public interest requires such improvement;” and “the dimensions to which the canal and locks shall be enlarged shall be determined by the ‘Canal Board.’” In pursuance of the authority delegated for that purpose, the Canal Board met at the Comptroller's office in this city, on the 30th ult., and on Friday last adopted the following resolutions:

At a meeting of the Canal Board, at the Comptroller's office, Canal Room, 3d July, 1835,—present—

STEPHEN VAN RENSSLAER, Canal Commissioner, President,  
SAMUEL YOUNG, Canal Commissioner,  
WM. C. BOUCK, do  
JONAS EARLL, Jr., do  
JOHN BOWMAN, do  
JOHN TRACY, Lieutenant Governor,  
A. C. FLAGG, Comptroller,  
JOHN A. DIX, Secretary of State,  
GREENE C. BRONSON, Attorney General.  
WM. CAMPBELL, Surveyor General,  
ABRAHAM KEYSER, Treasurer.

The Board having taken into consideration the act entitled “an act in relation to the Erie Canal,” passed May 11, 1835, thereupon,

1. Resolved, That the public interest requires the enlargement and improvement of the Erie Canal, and the construction of a double set of lift-locks therein.

2. Resolved, That the doubling of the locks, and the works connected therewith, ought to be commenced without delay and prosecuted with all reasonable diligence, beginning with that portion of the canal between the village of Syracuse and the city of Albany.

3. Resolved, pursuant to the 10th section of said act, That the enlargement of the canal should be commenced immediately after a sufficient sum shall have been collected and invested from the canal revenues, to discharge the Erie and Champlain canal debt.

4. Resolved, That the Canal Commissioners proceed without delay to make surveys for all the improvements contemplated by the said act, and that they make the necessary appropriation of all lands, waters and streams for the purposes afore said.

5. Resolved, That the canal be enlarged so as to give six feet depth of water, and in general, sixty feet width of water on the surface, with a slope of two feet to one in the banks.

6. Resolved, That the locks be enlarged so as to be one hundred and five feet long between the quoin posts, and fifteen wide in the clear, and in other respects be adapted to the enlarged canal.

7. Resolved, That the aqueducts be constructed so as to give at least forty feet water-way, except that the Rochester aqueduct may, in the discretion of the Canal Commissioners, be constructed with a water-way not less than thirty-six feet wide.

8. Resolved, That in other respects than those provided for by the foregoing resolutions, the Canal Commissioners make such improvements in the canal, and the works connected with the same, as they shall deem expedient.

9. Resolved, That the Canal Commissioners be requested to cause such examinations and estimates to be made as the time will permit, for the purpose of ascertaining the practicability and probable expense of an enlargement of the canal so as to give the several sizes of six and seven feet depth of wa-

ter—the width at surface to be in general ten times the depth of water.

10. Resolved, That the Board, when it adjourns, will adjourn to meet at this place on Tuesday, the 20th day of October next, to hear the report of the engineers, and consider further of this subject.

An extract from the minutes.

G. W. NEWELL, Clerk.

[From the Utica Observer.]

UTICA, May 22d, 1835.

A. G. Dauby, Esq.: Dear Sir,—I take the liberty of sending you the following correction of the statement in Williams' Register for 1835, of the length and cost of the New-York State Canals.

**SUMMARY OF CANALS COMPLETED.**

Name.	Length.	Cost p. mile.	Total cost.
Erie Canal.....	364	372	19,255 49 7,143,789 86
Feeders.....	8		
Champlain Canal....	64		
Glen's Falls Feeder..	12		
River navigation ab.	79	15,520 95	1,257,604 26
Troy dam.....	3		
Oswego Canal.....	38	14,879 93	565,437 35
Cayuga & Seneca do..	23	10,295 85	236,804 74
Chemung.....do..	23	39	8,505 96 331,693 57
Feeder.....do..	16		
Crooked Lake.....do..	8	19,597 11	156,776 90

Total miles, 559 Cost, \$9,692,106 68 or an average of \$17,367 57 per mile.

The Chenango Canal is now constructing, to be completed in 1836, is 97 miles long, 1021 feet of lockage by 109 locks, and is estimated by the Canal Commissioners to cost 1,960,456 25, or \$20,210 87 per mile, exclusive of land damages.—(Assembly Document of 1835, No. 296.) A. B.

**STEAMBOAT CANAL ACROSS THE ISTHMUS OF DARIEN.**—The Journal of Commerce, says:—By the annexed extracts from the Constitutionnel del Cauca, (New Granada,) which we find in a Jamaica paper of June 15th, loaned us by a friend, it will be seen that the object of Mr. Clay's resolution adopted by the Senate at the last session of Congress, in regard to a navigable communication across the Isthmus of Panama, is likely to be accomplished by private enterprise.

[Translated.]

“We are gratified in being able to make it known, that the Baron de Thierry has directed Post-Captain Labarriere, (of the new Grenada Navy,) to proceed to the Capital of this Republic, with proposals for cutting a Canal, which will unite by their own waters, Rio Chagres with Rio Grande, the latter having its outlet in the Pacific, and to make make both navigable by steamboats and small vessels, not drawing more than ten feet of water.

“It is admitted that the communication between the Atlantic and Pacific, by means of a carriage road, would be very advantageous; but how much greater facilities Steam Navigation would afford, by the contemplated Canal!

“Mercantile enterprise could be carried on to any extent. The transport of merchandize would be safe and expeditious, as steamers would be in continual readiness, and not subject to that constant expense required to keep a railroad in order, nor to many other inconveniences, as the Baron has pointed out in a note, which he has addressed through the Deputies of Panama, to the National Congress.

“It appears from several antecedent details, with the perusal of which we have been favored, that the Baron undertakes this gigantic concern, not for any individual benefit, but his principal object is to shorten the route between England and New Zealand, to which he is now proceeding to establish a Government on the European plan, and to encourage emigration to that fertile and extensive country, in which all the productions of the earth may be raised with the greatest ease and abundance, particularly the silky flax, (phormium tenax,) being an article of such great value in the commercial world.

“The Baron has ample funds of his own, and credit with several European Bankers; and the Canal being the most important of his present undertakings, we have no doubt of his success.”

In laying before our readers this interesting com-

munication, we hope, from the zeal of the Congress now assembled at Bogota, that they will give their aid to a measure for the benefit of universal commerce, and put an end to the long and dangerous voyages around the Cape into the Pacific. Such an undertaking has long been desired, and we hope to see it accomplished, under the superintendence of Baron de Thierry, with whose talents and scientific knowledge the public are well acquainted.

Extract of a private letter, dated Panama, 29th May.

I have this moment received my letters from Bogota, and the intelligence they convey is very satisfactory. M. La Barriere arrived at the Capital, twenty two days before our deputies. He writes to me as follows:—"The President gave me a most cordial reception, and read over with enthusiasm the proposals for the Canal—and promised in the kindest manner to exert all his influence with Congress to meet the views of the Baron; and added, that he would give 10 years of his life to have such a work completed during his administration. So all looks well."

We are indebted, and would again acknowledge our obligation, to P. G. VOORHIES, Esq., for the following and a continued regular monthly statement of the range of the Thermometer in the interior of Louisiana. It must be interesting to those who, in other parts of the country, keep a register of its variations. The accompanying remarks must also be interesting.

Extract of a Letter, dated  
Avoysle Ferry, on Red River, La., }  
June 6, 1835. }

Sir,—The prospects of our planters are flattering—our crops of cotton and corn are generally very promising at this time throughout our section of country.

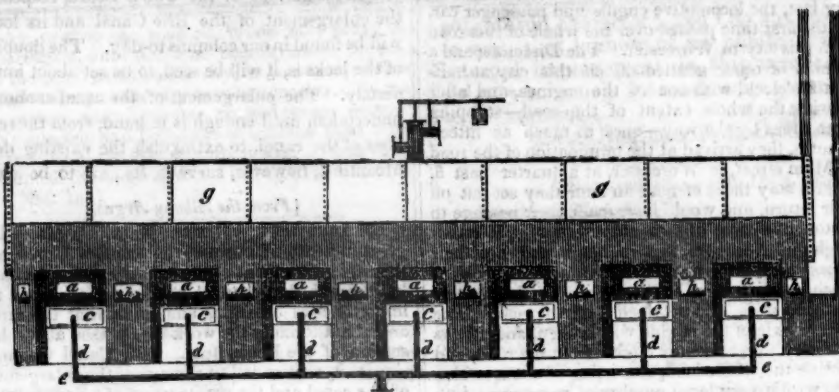
Yours, &c.  
P. G. VOORHIES.

METEOROLOGICAL TABLE,  
For the month of May, 1835—kept at Avoysle Ferry,  
Red River, Lou. (Lat. 31° 10' N., Long. 91° 59' W.,  
nearly), by P. G. VOORHIES. [Communicated for  
the American Railroad Journal.]

Days.	Morn.	Noon.	Night.	Wind.	Weather.	Remarks.
1	68	64	63	nw	cloudy	{ heavy rains and thunder all day
2	58	78	76	calm	clear	Red river falling
3	68	82	78	..	..	
4	70	82	77	sw	..	
5	72	80	78	calm	..	
6	66	81	76	..	..	
7	71	80	77	sw	..	
8	72	84	79	se	..	high wind
9	64	70	68	nw	..	all day
10	60	69	64	calm	clear	Red river on a stand
11	66	82	78	..	..	
12	72	81	76	s	..	
13	74	83	80	..	..	
14	72	86	80	sw	..	
15	64	78	74	n	..	
16	60	77	70	calm	..	
17	58	80	73	..	..	
18	60	78	72	se	..	light wind
19	71	78	76	..	cloudy	thunder storm at noon
20	71	83	80	calm	clear	{ cloudy evening—Red river rising
21	70	85	78	..	..	
22	70	83	80	se	..	
23	70	84	80	calm	..	
24	70	84	75	s	cloudy	{ little rain and thunder in the evening
25	71	81	78	calm	clear	
26	69	83	78	..	..	
27	68	84	80	..	..	
28	70	84	79	..	..	
29	69	85	81	..	..	{ U. S. snag steamboats, Capt. Shriver, passed down the river on Red river—left unfinished, 23 to 25 miles; 3 steamboats, 1 keel
30	68	86	83	s	..	
31	72	86	84	..	..	

Red river rose this month, 1 foot 0 inches—and is below high water mark, 5 feet 2 inches.

# IMPROVED PROCESS OF GENERATING HEAT AND STEAM.



We have been favored by Mr. Clute, of Schenectady, with the annexed specification and engraving of his improved furnace.

References—*a a*, apertures for iron; *b b*, grates; *c c*, receivers; *d d*, branches of main blow-pipe; *e e*, main blow-pipe; *g g*, cylinder boiler; *h h*, apertures for coal.

Specification of a Patent granted to PETER I. CLUTE, of Schenectady, New-York, for an Improvement in the Process of generating Heat, for forging Malleable Iron, and generating Steam to propel Machinery.

Be it known, that I, Peter I. Clute, of the city of Schenectady, in the county of Schenectady, and state of New-York, have invented a new and useful improvement in the art or process of generating heat for forging malleable iron, and of generating steam to propel machinery for the purpose of grinding and polishing iron when manufactured, and for the other purposes for which steam power is generally employed.

The following is a description of the construction and operation of the furnaces and apparatus to be used in my invention.

Where other than a cylinder boiler, or where more than one boiler, is designed to be used, a given number of furnaces of the description hereinafter set forth, are to be erected under the same, arranged in the most convenient form, to receive as many points of the boiler or boilers, as, according to the principles hereinafter laid down, may be deemed most expedient; as, for example, in a circular form.

The cylinder boiler, however, I deem best adapted to the contemplated purposes of my invention.

Where the cylinder boiler is used, the number and size of the furnaces will vary according to the size of the boiler, and the quantity of steam required to be raised. The furnaces are to be built in a straight line, of uniform width and height, equidistant and continuous, the boiler to be laid horizontally or lengthways on the top of the furnaces. There is an aperture at either end of each furnace, through which the coal is shoved on the grate, and the fires fed as occasion requires. Under each grate there is a box, which I shall designate by the

name of receiver, because it receives the blasts from the blow-pipe and the ashes falling through the grate. The receiver may be taken out and cleaned when necessary. Each receiver has at one of its sides an aperture for receiving a branch of the blow-pipe. There are, of course, as many branches to the main blow-pipe as there are furnaces, and the blow-pipe is connected with the bellows, which is worked by the steam the heat of the furnaces generates. The branch blow-pipe enters the receiver about at its centre, at a point equidistant from the grate and the bottom of the receiver, thus causing the wind in the receiver to circulate equally. There is an aperture near the top of the furnace, in front, through which to protrude the iron to be heated.

This aperture may be closed by a valve when not used.

Let the cylinder boiler be 20 feet long and 2½ feet in diameter; then there ought to be about seven furnaces, and the proportions of the different parts of the furnaces, &c., ought to be, as nearly as may be, as follows: Distance between the grate and the boiler, twelve inches; length of grate, eighteen inches; width of grate, eight inches; width of the furnace to correspond with the size of the grate; the aperture at either end, to admit the coal, to be 8 inches in width, and 6 inches in height; the receiver, 8 inches in width, and 6 inches in height; aperture for receiving the blow-pipe, 1½ inch in diameter; aperture through which to heat the iron intended to be worked, 6 inches in width, and three inches in height; distance between each grate, three eighths of an inch; diameter of blow-pipe, 4 inches, and diminished to one inch and a half at the entrance into the receiver.

The strength of the blast required is equal to that of a blacksmith's fire. The degree of heat may be regulated by valves placed in the blow-pipe.

I do not claim to have discovered or invented any thing new in the construction of the furnaces abstractly considered, or in any of the apparatus connected with the steam engine, nor can my invention in strictness be considered as an improvement of a machine or instrument previously patented; nor can it be considered an application of an old instrument or machine to a new purpose. What I claim as new, and my own invention, may be reduced to the following particulars:

1st, The using a number of furnaces to raise steam; 2d, the process of heating the boiler *uniformly* at many points, thus differing from the universal practice which now obtains, of heating the boiler at one particular point; 3d, the employing the same steam raised by the furnaces in driving the bellows connected with these furnaces; 4th, the application of the blow-pipe to ignite anthracite coal for raising steam; 5th, the using the same fire for the double purpose of raising steam and heating and working malleable iron.

I consider these two last particulars the most important, and as in especial manner distinguishing my invention from every other. This apparatus possesses a highly important advantage, in that it may be used for *manifold* purposes—for the manufacture of malleable iron into the different articles usually made by blacksmiths, and edge tools, nails, &c., and the steam power may be applied to grinding and polishing the iron, when manufactured, to propelling boats, driving a trip-hammer and mills of every description, and the other purposes for which steam power is generally employed.

PETER I. CLUTE.

#### AGRICULTURE, &c.

[From the American Gardener's Magazine.]

*On Budding Trees and Shrubs.* By the CONDUCTORS. To which is added, the different modes of Budding; and of Herbaceous, or Summer Grafting, extracted from Loudon's Gardener's Magazine.

The propagation and multiplication of the different species and varieties of trees, shrubs, and plants, especially kinds of delicate growth, is, we believe, quite imperfectly understood, in this country. The common methods of grafting and budding have long been in practice, as almost the only means of increasing plants, unless it were those which propagate easily from cuttings, suckers, or division of the root. We have lately observed in some of the nurseries which we have visited, several methods in practice which were quite new to us, and which we should think, from the success attending the practice, would, if become extensively known, be the means of greatly facilitating the multiplication of many delicate kinds, which it has been found exceedingly difficult to increase to any extent.

With trees, the common method of grafting is generally adopted, and in budding, the old system is almost universally pursued. Very few attempts have been made to render practicable and successful many of the new and more recent methods, laid down in most horticultural books, more particularly those in use by the French, who far excel even the English horticulturists in the multiplication of plants; this is owing to their knowledge in vegetable physiology, and to the various experiments which they are continually making for the discovery of some new method.

The following article we have extracted from Loudon's Magazine, with the hope that it will suggest some new ideas, as well as present some new methods, upon budding and herbaceous grafting, which will not fail to be of great benefit to individuals, as well as to the public in general. It was translated from a Belgium work, by Mr.

Loudon, the indefatigable editor of the Gard. Mag., with some additions and alterations; but as we are sure it will be one of the most interesting articles in our present number, we present it entire.

"The following article we have translated, with some additions and variations, from *l'Horticulteur Belge*; and we present it to our readers as more complete than any article which has hitherto appeared on budding and herbaceous grafting in the English language. We have given the French names of the different kinds, both of budding and grafting; not only because we think the doing so will be useful to gardeners who visit the Continent, or read French books on gardening, but because many of the terms are not translated literally. For example, the French apply the word *greffe* (graft) as a generic term, including both grafting and budding; whereas the English, and also the Germans, use distinct words for these two kinds of operations. The Germans use the word *veredlung*, ennobling or improving, as including both grafting, *propfen*, and budding, *oculiren*. In English we have no gardening word to express the two operations, although the word incision might be used for this purpose.

#### I. BUDDING. *Greffes par Gemmes.*

1. *Escutcheon Budding, without a Bud or Eye; Greffe en Ecusson sans Yeux.*—The object of this mode of budding is simply to cover a wound or blemish in one tree by the live bark of another. Take from a tree of the same sort, or at least of the same genus, as the wounded tree, a piece of bark rather larger than the wound, and form it into a regular shape; then cut the bark round the wound into the exact form and dimensions of the piece to be inserted, so that the latter may be let into the former with the greatest exactness. The inner bark of the graft and that of the stock being fitted so as to joint perfectly all round, and the shield closely adhering to the tree in every part, it is kept on by a ligature; and the edges of the wound are covered with grafting-wax or clay. It is a remarkable fact, which some are, perhaps, not aware of, that the wood formed under a piece of bark inserted in this manner, even though that bark be without a bud or eye, will be the wood of the tree from which the shield was taken. In this way several different kinds of wood might be formed on one tree, without introducing a single leaf belonging to those different woods. The portion of wood introduced will always be limited in diameter to the size of the portion of bark put on.

2. *Budding with a Bud or Eye, and a circular Escutcheon; Greffe en Ecusson par Inoculation.*—With the point of a grafting-knife, or rather with that of a penknife, cut a small bud out of the tree to be propagated, leaving a narrow rim of bark round it, and taking, at the same time, a portion of the wood, which is retained. A hole is made in the stock, of the same size as the bud and its rim, and of a depth equal to the length of the piece of wood left on. The whole is adjusted so that the bud, with its bark and wood, fills up the wound exactly; and the edges are then covered with grafting-wax. This mode of budding is employed to equalize the flower-buds over a tree, by removing some, from where there are too many, to those parts of the tree where there are too few.

3. *Escutcheon Budding with Wood under the Bark; Greffe en Ecusson boise, (fig. 6.)*—To procure the escutcheon, a deep and

transversal incision is made above a healthy and vigorous bud; then, by withdrawing the



blade of the grafting-knife, and entering it rather higher than this cross cut, a narrow strip of bark, three or four lines broad, by 1 in. or 1½ in. long, is taken away, terminating in a point

at the bottom. The eye should be situated about a third from the top, and the stipules, or other appendages that sometimes accompany the petiole, as well as prickles, &c., must be taken off with caution. With the point of the grafting-knife, the wood of the escutcheon is then taken out, leaving a small piece immediately under the eye, and about a third of the length of the escutcheon. The bud, thus prepared, is inserted in the stock, and then tied as before. This mode of budding is that most generally used in European nurseries.

4. *Escutcheon Budding, with a growing Bud; Greffe en Ecusson avec un Œil poussant.*—The escutcheon is cut, and placed in the same manner as by the preceding method; but, as soon as it is inserted, the head of the stock is cut off, and all the buds that push from it, except that from the escutcheon, are rubbed off as they appear. This mode of budding, when done in the spring, has the great advantage of forcing the bud to develop itself immediately, thus gaining a year. However, it sometimes happens that, if the bud does not take, the sap of the stock not being able to find a channel, from all the shoots being rubbed off as they appear, the stock, or at least a great part of its length, dies of repletion. When done in the month of August, this mode of budding seldom succeeds, because the young shoot, not having time to ripen, perishes with the frost, and often causes the death of the stock.

5. *Escutcheon Budding, with a dormant Bud; Greffe en Ecusson avec un Œil dormant.*—This mode is similar to the preceding; but it is performed in August, and nothing is cut away from the stock till the following spring, in order to prevent the development of the bud before that season. Though longer before it takes effect, this mode of budding is more certain to succeed than the preceding method. It has also the merit of not hurting the stock, if it does not take. The inhabitants of Vitry, who carry on the greatest commerce in fruit trees in the neighborhood of Paris, use it almost exclusively. This mode is that generally used in the British nurseries.

6. *Escutcheon Budding, without the Wood; Greffe en Ecusson denue de Bois.*—According to this mode, all the wood is taken away except a speck immediately under the bud; to the life of which bud, however, that speck is essential. The rest of the process is as usual. Besides being very suitable for orange trees, this mode of budding is used for all trees having hard wood, such as myrtles, hollies, and all analagous species, whether indigenous or exotic. It can be done either with the growing bud or dormant bud.

7. *Escutcheon Budding, with Pincers; Greffe en Ecusson a Emporte-piece.*—A pair of pincers ought to be made on purpose, with which a piece of bark is taken off the stock. With the same instrument, or with the blade of the grafting-knife, an escutcheon or plate of bark, having a vigorous eye in its centre, is taken off a young shoot of the tree to be propagated. It must

be exactly of the same size as the wound made in the stock, in order to fill it with the greatest precision. When it is properly fixed, it is supported by means of grafting-wax or soft wax. This method is excellent for budding old trees, the thick and rugged bark of which is not suitable for the ordinary modes.

8. *Escutcheon Budding, with the Eye turned downwards; Greffe en E'cusson a Rebours.*—The escutcheon is cut in such a manner that the point of the eye, when placed on the stock, is turned downwards, whether the incision in the stock is made in the usual manner, or like a T reversed, thus, L. By this method, the buds are forced to grow in a direction opposite to that which they would have taken naturally; but they soon resume their usual position; and the desired end, viz., that of increasing the size of the fruit by stagnating the returning sap, is thus by no means attained.

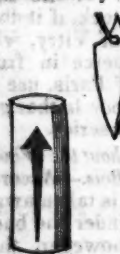
9. *Reversed Escutcheon Budding; Greffe en E'cusson renverse, (fig. 7).*—The escutcheon is prepared in the form of a triangle; but, instead of bringing it to a point under the eye, it is pointed above it. It will



be perceived that the incision in the bark of the stock must be also reversed; that is to say, instead of being in the form of an upright T, it must be like a T turned upside down, as in the figure. To effect this, the longitudinal incision is made above the transversal one, instead of making it below it. It is finished with ligaments and

grafting-wax, as the preceding modes. In comparatively cool and moist climates, like that of Britain, the grafting-wax may be dispensed with in such cases as this and the three or four preceding ones. This manner of budding is almost the only one used in the south of Europe, particularly at Genoa and at Hieres, to multiply orange trees. It is also suitable for the propagation of trees having abundant and gummy sap; and it might probably be advantageously employed to secure the success of buds on resinous trees.

10. *Budding resinous Trees; Greffe en E'cusson d' Arbres resineux, (fig. 8).*—An incision is made in the form of T, as if for an ordinary bud, in the bark of the stock.



A double incision is then made obliquely, about two lines or two lines and a half from the upper part of the T: this incision should penetrate the bark to the thickness of nearly a line, or so as to reach the soft wood. This mode of budding succeeds not only on resinous trees, but also on all those that have a gummy and

very abundant sap.

11. *Covered Budding; Greffe en E'cusson couvert, (fig. 9).*—The bud is prepared as usual; but, when it is inserted in the stock, instead of a ligature, the lines of junction are covered with grafting-wax: a



piece of bark is then taken from another tree, and, a small hole being made in the middle of it, it is placed on the escutcheon, so as to cover the whole of it except the bud, which appears through the hole, as in the figure. A bandage is then put over the bark, to keep the whole toge-

ther. This mode of budding is rather too intricate for ordinary purposes; but it may be worth adopting for rare and delicate trees.

12. *Budding with a square Escutcheon; Greffe en E'cusson carre.*—Three incisions are made in the stock, one transversal, and the two others longitudinal, beginning on each side of the horizontal one, and descending perpendicularly four or five lines. They are to be four or five lines apart, and to represent a long square, the bottom line of which is wanting. This square strip or plate is raised and turned down. A square escutcheon, provided with a good eye, is then cut from a branch of the tree which is to be propagated, exactly of the same size as the plate stripped down the stock; and it is applied to the incision, which it must cover with the greatest exactness. This being done, the plate of bark, which was hanging down on the stock, is raised, and the escutcheon covered up to the eye; the line of junction is then coated with grafting-wax, and the whole is tied like other buds. It appears that this mode of budding was much used formerly, and that it succeeded perfectly; but, as it is rather tedious in the execution, it is now seldom employed.

[To be continued.]

[From the National Intelligencer.]

PEACH TREES.—This modest and beautiful tree, the parent of one of the most delicious of all fruits, is, if properly managed, perhaps the most easily cultivated and preserved of all fruit trees. To sustain these observations, I mention my own experience. On a rented farm, and on which I resided near ten years, I found but one good thriving peach tree when I took possession, and only a few stocks of that tree in any condition. Regarding it a duty which every man owes to society, to plant fruit trees if in his power, I commenced raising the peach from the stone, and persevered in that plan during nine seasons, and left a considerable number of the very finest peach trees in the highest state of health when I removed.

There is no other fact in natural history, of the truth of which I am more convinced, than that the peach tree would, in any part of the middle or southern States, flourish, if three rules were observed:

1st—Plant the seed annually, so as to have new plants to set out annually; or, what is much better, plant the seed where the tree is to stand.

2nd—Whenever the tree commences to decay, cut it down as near the ground as possible.

3rd—Plant the peach tree in your best soil, and work the ground around where it stands.

In the public prints, we see this season, from all quarters, accounts of the destruction of the peach tree by the frosts of last winter. In some cases the body of the tree is said to be killed, while the roots are living.

The peach tree is evidently a native of a much warmer climate than that of the central United States. In Louisiana, Mississippi, and Florida, I have seen it in flower, and in leaf partially, at every winter month. It is of course in the southern section of the United States an imperfect

evergreen. In all situations and climates where I have seen it growing, from N. lat. 29 deg. to 45 deg. it is a tender tree and demands care; but with care and skill, there is no other tree which yields to man a more grateful and certain return.

Similar to all organized beings, when wounded by any adverse cause, the peach tree exerts the principles of life, or more distinctly the principles of self-preservation, and, in the very case of injury by frost, this operation of nature becomes so striking as to arrest attention from the most casual observer. In the National Intelligencer of May 28th, 1835, quoting from the Wyoming Republican, I have read the following:

"A few weeks since we mentioned that the peach trees in this neighborhood were generally killed by the coldness of the winter. Upon close examination, we find the roots of the trees are alive, and some of the limbs of many are putting out leaves; tho' in general the tops are dead."

Now, from actual experience I am fully convinced, that, if those trees, the roots of which are alive, and exerting their resources to save the branches, were relieved by amputation of the whole tree to within one, two, or three inches of the ground, that numerous fine healthy young stems would be seen rising, and which, in two, or at most three years, would be loaded with fruit. This statement is made from actual experiment, within twenty miles from your office, and never failed in a single instance. The preservation of the tree in this case is very greatly enhanced by keeping the ground loose and clear of weeds near the roots.

Let me, in conclusion, say to the Farmer, plant the seed of peach annually, keep the ground cultivated around the root, and when, by any means, the stock is found in a decaying state, cut it away, and leave the root to expend its resources on the production of new scions, and one of the most ornamental trees and most delicious fruits may be secured with almost unerring certainty. A TRAVELLER.

PROPAGATION OF THE SILK WORM.—Last year, on the 4th of July, CHARLES DYER, Esq., of this city, had four silk worms. From these four and their progeny, he had three complete crops of cocoons. There are now feeding, at the cocoonery of the Valentine Company in this city, about SEVEN HUNDRED THOUSAND worms, all the product of the four which Mr. Dyer had on the 4th of July, 1834.—[Providence Journal.]

#### PRICES OF RAILROAD STOCKS,

At the New-York Stock and Exchange Board,  
JULY 11, 1835.]

	Par.	Ask.	Offer.
Mohawk and Hudson....	100	122	121
Paterson.....	95	—	—
Ithaca and Owego.....	—	—	—
Saratoga.....	—	114	110
Harlaem.....	—	117	116
New-York and Albany....	—	—	—
Boston and Providence....	100	123	123
New-Jersey Railroad and Transportation Line...	100	116	114
Camden and Amboy.....	100	—	—
Providence and Stonington.	100	101	100
Boston and Worcester....	—	—	—
Philadelphia and Trenton..	100	102	101
Utica and Schenectady....	100	126	125
Jamaica.....	—	114	114
Saratoga and Washington..	—	—	—
Hudson and Berkshire....	100	102	100
Long Island.....	100	102	101
Saratoga and Whitehall...	100	110	—

NEW-YORK AMERICAN.

JULY 4—JULY 10, 1835.

## OBITUARY.

The event which latterly has held in such deep suspense "the hopes of the good, and the fears of the wise," has at length occurred—JOHN MARSHALL, Chief Justice of the United States, is dead! We know of no form of words, whereby admiration and regret could add emphasis, to the simple enunciation of this melancholy fact.

The Chief Justice died in Philadelphia on Monday afternoon. He had gone to that city to seek medical aid—but the most eminent talent and the most assiduous care, failed to prolong a life, already protracted beyond the ordinary term of man's years—and of which the whole course, from early manhood to the day of his death, was passed in most arduous public services.

"Mr. Marshall," we borrow from the Philadelphia Inquirer, "was born in Virginia, on the 24th of September, 1755; and as early as the summer of 1775, received a commission as lieutenant of a company of Minute men, and was shortly after engaged in the battle of the Great Bridge, where the British troops, under Lord Dunmore, were repulsed with great gallantry. He was subsequently engaged in the memorable battles of Brandywine, Germantown, and Monmouth; and in 1780, obtained a license to practice law. He returned to the Army shortly after, and continued in the service until the termination of Arnold's invasion.

In the spring of 1783, he was elected a member of the State Legislature, and in the autumn of the same year, a member of the Executive Council, and married in 1783. In 1788 he was elected as Representative of the city of Richmond in the Legislature of Virginia, and continued to occupy that station for the years 1789, 1790, 1791, and upon the recall of Mr. Monroe, as Minister, from France, President Washington solicited Mr. Marshall to accept the appointment as his successor, but he respectfully declined. In 1799 he was elected and took his seat in Congress, and in 1800 he was appointed Secretary of War.

On the 31st of January, 1801, he became Chief Justice of the Supreme Court of the United States, which distinguished station he continued to fill with unsullied dignity and pre-eminent ability, until the close of his mortal career. His biographer eloquently observes—"What indeed strikes us as the most remarkable in his whole character, even more than his splendid talents, is the entire consistency of his public life and principles. There is nothing in either which calls for apology or concealment.—Ambition never seduced him from his principles—popular clamor never deterred him from the strict performance of his duty. Amid the extravagance of party spirit, he stood with a calm and steady inflexibility—neither bending to the pressure of adversity, nor bounding with the elasticity of success. He lived such as man should live, by and with his principles. If we were tempted to say in one word in what he excelled all other men, we would say, in wisdom; in the union of that virtue, which ripened under the hardy discipline of principles, with that knowledge, which constantly sifted and refined its old treasures, and as constantly gathered new.—The Constitution, since its adoption, owes more to him than to any other single mind, for its true interpretation and vindication. Whether it lives or perishes, his exposition of its principles will be an enduring monument to his fame, so long as solid

reasoning, profound analysis, and sober views of government shall invite the leisure, or command the attention, of statesmen and jurists."

He died calmly and tranquilly, surrounded by three of his children and many valuable friends.—The blow was not unexpected, and he was fully prepared. But a few days since he penned an inscription for his tombstone.

The subjoined sketch of this lamented individual will—now that our eyes are to look upon him no more—be read with renewed interest. It is accurately descriptive and just.

## Chief Justice Marshall,

BY WILLIAM WIRT.

The Chief Justice of the United States is in his person tall, meagre, emaciated, his muscles relaxed, and his joints so loosely connected as not only to disqualify him, apparently, for any vigorous exertions of the body, but to destroy every thing like elegance and harmony in his air and movements.—Indeed in his whole appearance and demeanor,—dress, attitude and gestures—sitting, standing, or walking—he is as far removed from the idolizing graces of Lord Chesterfield, as any other gentleman on earth. To continue the portrait: his head and face are small in proportion to his height; his complexion swarthy; the muscles of his face being relaxed, gives him the appearance of a man of 80 years of age, nor can he be much younger. His countenance has a faithful expression of great good humor and hilarity; while his black eyes, the unerring index—possess an irradiating spirit, which proclaims the imperial power of the mind that sits enthroned within.

This extraordinary man, without the aid of fancy, without the advantage of person, voice, attitude, gesture, or any of the ornaments of an orator, deserves to be considered as one of the most eloquent men in the world; if eloquence may be said to consist in the power of seizing the attention with irresistible force, and never permitting it to elude the grasp, until the hearer has received the conviction which the speaker intends.

As to his person, it has already been described. His voice is dry and hard, his attitude in his most effective orations was often extremely awkward, as it was not unusual for him to stand with his gestures proceeding from his right arm, and consisting merely in a vehement perpendicular swing of it from above the elevation of his head to the bar, behind which he was accustomed to stand.

As to fancy, if she held a seat in his mind at all, which I very much doubt, his gigantic genius tramples with disdain on all her flower decked plants and blooming parterres. How, then, will you ask, with a look of incredulous curiosity—how is it possible that such a man can hold the attention of an audience enchained through a speech of an ordinary length? I will tell you.

He possesses one original and almost supernatural faculty, of developing the subject by a single glance of his mind, and detecting at once the very point on which the controversy depends. No matter what the question, though ten times more knotty than the 'gnarled oak,' the lightning of heaven is not more resistless than his astonishing penetration. Nor does the exercise of it seem to cost him an effort. On the contrary, it is as easy as a vision. I am persuaded that his eyes do not fly over a landscape and take in its various objects with more promptitude and faculty, than his mind embraces and analyzes the most complex subjects.

Possessing while at the bar this intellectual elevation, which enabled him to look down and comprehend the whole ground at once, he determined, immediately, and without difficulty, on which side the question might be most advantageously approached and assailed; in a bad cause, his art consisted in laying his premises so remotely from the point directly in debate, or else in terms so generous and specious, that the hearer seeing no consequences which could be drawn from them, was just as willing to admit as not; but his premises once admitted, the demonstration, however distant, followed as certainly, as cogently, and as inevitably, as any demonstration in Euclid.

All his eloquence consists in the apparently deep self-conviction and emphatic earnestness of his manner; the correspondent simplicity and energy of his style; the close and logical connection of his thoughts, and the easy gradations by which he opens his lights on the attentive minds of his hearers.

The courts and the bar in Philadelphia are making preparations to do honor to the memory of this great Jurist—and in this State, as in every other, we presume, as the respective courts meet, there will, it cannot be doubted, be a spontaneous and earnest expression of respect, and admiration, for so brilliant and so useful a career as that just closed.

To John Marshall belongs, and will belong perennially, the glory of having giving form, and fashion, and precise interpretation, and fixed and definite applicability, to the general provisions of that most perfect of human instruments, the Constitution of the U. S. Living with, and sharing the councils, as in the revolutionary struggle he had shared the perils of, the wise and patriotic men who framed it, and fitted by early studies, by practical experience in public life, and above all, by the rare endowment of an analytical and honest mind, which knew how to seek out truth, and which nothing other than truth would satisfy—to comprehend, to elucidate, and to establish the great views and aims of that Constitution—he has, by his decisions and opinions as Chief Justice, made plain what seemed confused, unravelled what was intricate, and—without seeking to extend, or consenting unduly to limit, the authority and jurisdiction of the Court over which he presided, but by carrying out unambitiously yet unflinchingly, the purposes of its organization—he has shown it to be the safest, the wisest, and the most efficient bulwark, alike of State rights and of rightful Federal authority.

At any moment, the loss of such a man would be deplored; but at this moment, when the possible successors of such a name, and to such a station occur to the mind, regret is indeed unmitigated by aught of hope.

## U. S. Military Academy.

Report of the Board of Visitors invited by the Secretary of War to attend the General Examination of the Cadets of the United States Military Academy.

Hon. Lewis Cass, Secretary of War.

SIR:—The undersigned, having attended the General examination of the Cadets of the United States Military Academy, as a Board of Visitors, submit the following Report as the result of their observations.

The Board directed their inquiries to the course of instruction, both military and scientific, to the internal police, discipline, and fiscal concerns of the Institution. In making these inquiries, every facility was afforded by the Superintendent and members of the Academic Staff. In order that these inquiries might be prosecuted with greater advantage, Committees were appointed by the Board, with instructions to inquire especially into the portion of the foregoing subjects referred to them respectively, and to report the result of their observations.

The reports of those Committees, which are herewith transmitted, will convey to you much information in detail, which could not conveniently be embodied in this report.

As this is professedly a Military Institution, the attention of the Board was first directed to the course of military instruction. Although this branch embraces a wide field, it is intended to speak of it as limited to Engineering, Artillery, and Infantry Tactics.

Engineering is divided into two branches; Civil and Military; and in connection with the latter, is taught the Science of War, so far as it relates to the attack and defence of military positions, and the providing of defensive means for an army operating in the field.

In the course of Civil Engineering, is taught the properties, preparations, and use of materials of construction; elementary parts of buildings, and the art of construction generally, including decorative architecture; the manner of laying out and constructing roads, the construction of the various kinds of bridges, the general principles which regulate the removal of obstructions that impede the navigation of rivers; the survey, location and con-

struction of canals and railroads; and the formation of artificial, and the improvement of natural harbors. This branch is taught to the first, or graduating class, by lectures, and a series of drawings and notes, prepared by the Professor from the best authorities, and lithographed at the press belonging to the Institution, under the title of "Outlines of the Course of Civil Engineering." Drawings, illustrative of the prominent parts of the subject, are executed by the Cadets; and these exhibit great neatness of execution, as well as much precision in detail.

Next in order is the course of Military Engineering.

This comprises Field and Permanent Fortification. In the first, are taught to the same class, the principles which regulate the construction of field intrenchments; the different kinds of lines; batteries for the various kinds of ordnance; the armament of intrenchments, with reference to the attack and defence, enclosed and detached works; defence of posts; and the construction of military bridges; permanent fortification, including a complete description of the bastion front; the attack and defence of the same; a critical examination of the principal systems of fortifications; the construction and armament of a fortress; the hydraulic works used in the defence of military positions; mining; the principles of defilement, and their application to works constructed for inland and maritime defence. Military Engineering is taught from a text book, and from notes prepared with judgment and skill, by the Professor; the whole being amply illustrated by drawings, executed by the students, under the immediate supervision of instructors.

To the professional ability of the Professor to whom this department is confided, the very able and satisfactory manner in which his pupils acquitted themselves in the various parts of their course at the black board, in presence of the Visitors, afforded the most pleasing and ample testimony.

No changes, either in the course of study or organization, are at present contemplated, nor are any deemed necessary. The Board, however, would recommend the continuance of small appropriations of money, by Congress, for the purpose of providing the department with such works and models as the Professors may from time to time require.

Instructions are given to the Cadets of the first class in Artillery Tactics, during the encampment, which usually commences in June and terminates on the first of September following. During this time, they are required to recite upon a system of Field Artillery, at the same time that they are taught a course of Pyrotechny, Mortar exercises and Target practice, with guns of various calibre, as well as mortars and howitzers. Cadets of the other classes are also taught the drill of Field Artillery during the suspension of the other academic studies.

It is thought by the officer at the head of the Department, that the time allowed for recitation is insufficient, and that much which ought to be studied thoroughly is necessarily passed over rapidly.

In our country there is no establishment provided by law especially for instruction in Artillery. All the education our officers receive in this branch of study is, with the exception of the mere drill of an artillery garrison, obtained at this place. This deficiency would seem to suggest the importance of placing this department of the Academy upon a more enlarged and permanent basis.

It is the opinion of the Board, that it would be greatly to the advantage of this course of instruction, if a permanent assistant were attached to it, instead of the mode now in use of detailing Cadets from the graduating class.

In connexion with this subject, the Board would remark, that the moving of ordnance on the field, by the bodily exertions of the Cadets alone, is a requisition upon them of great severity, and is at the same time obnoxious to the objection, that it keeps the Cadets entirely unskilled in the only mode of using the field piece employed in actual service. The Board would, therefore, suggest the propriety of procuring a number of horses sufficient for Artillery exercise, and also for instruction in Cavalry tactics.

The same horses would be used for both purposes, and the number required would not exceed forty.

Cavalry Tactics have never been taught at the

Academy. Cavalry, as an arm of national defence, is confessedly of great importance. It is submitted whether instructions in that branch might not be advantageously added to the course of instruction at this Institution.

The Ordnance Stores furnished for the year, are good in quality and sufficient in quantity. Some field pieces and guns of different calibre are wanted to render this department complete, which are particularly detailed in the report of the Committee on this subject.

On drill, and in firing in the field, the Cadets exhibited a thorough knowledge of the manoeuvres and evolutions in this important arm of service; and in their drawings and mathematical demonstrations at the black board, they evinced high proficiencies in the theory and practice of gunnery. Their target firing and accuracy of throwing shells, are very commendable, and afford unequivocal evidence of great zeal and ability on the part of the instructor, for which he is entitled to much credit.

The corps of Cadets, organized as a battalion of infantry, exhibits on the field a perfect knowledge of infantry tactics, and performs all the evolutions of the line and of the battalion with facility and accuracy. Their appearance in dress, in the condition of their arms and accoutrements, as well as in soldier-like bearing, is highly gratifying, and deserves much commendation, whilst it reflects much credit on the experienced officer who commands them.

With regard to the course of study in the other branches which are taught, agreeably to the regulations of the institution, the Board was well satisfied with the abilities and zeal of the professors and their assistants.

Besides the branches already mentioned, the Cadets of the first, or graduating class, were examined on Moral and Political Science, and on Mineralogy and Geology, on all of which they exhibited attainments that could only be the result of much attention on their part, aided by skill and perseverance on the part of the Professors and their Assistants.

In Moral and Political Science, the first class was subjected to a satisfactory examination. The familiarity they evinced with the several systems of ethics propounded by distinguished masters at different periods, showed that their minds had been effectually directed to the distinguishing characteristics of those systems, and their relative merits closely compared by them and familiarly understood. The examination on the subject of Government and Constitutional Law, were highly gratifying, with room, it is true, for slight shades of difference in opinion; on the latter topic, the discussions and replies of the class were such as showed a just comprehension of the nature and objects of civil government in general, of the peculiar and unique and happy system under which they live; qualifying them at once for participation in the pursuits of civil and political life, and teaching them duly to appreciate the blessings of those institutions, which, as soldiers, they may be called upon to defend.

The second class was examined on Natural and Experimental Philosophy, on Chemistry, and Drawing. On these branches, the proficiency of the Cadets was quite creditable to themselves and to their instructors. The knowledge which the pupils seem to have acquired in the important branch of Chemistry, not only of its general principles, but of their application in detail was gratifying. The specimens of Drawing by the Cadets, exhibited to the Board, showed a practical acquaintance with this branch, which demonstrated that they are fitted at once to apply their acquirements to purposes of practical utility.

The third class was examined in Mathematics, in the French Language, and Drawing.

The fourth class in Mathematics and the French Language.

It has often been remarked, that in no school is the mathematics more thoroughly taught than at this Institution. The correctness of this remark was quite manifest during the present examination, whenever mathematics or any other branch dependent on that science was under consideration.

The examinations on the French language were very satisfactory. To those acquainted with the language, there appeared, by the course of instruction, to be imparted to the student a thorough knowledge of the principles of the language.

Some of the members of the Board had an op-

portunity of witnessing the proficiency of the Cadets under the instructions of the Sword Master. It was thought to be quite creditable. Whilst the instructions of the Sword Master secure to the officer and soldier the best means of personal defence, the exercise connected with them is well fitted to improve the health, and to impart to the muscular system tone and vigor.

As connected with the course of study, the Board has thought proper to remark, that a good Library, a Chemical and Philosophical Apparatus, are essential aids in imparting scientific instruction. It is believed an important benefit would be conferred on the institution, by adding to the library some of the periodical works which contain the earliest, and, at the same time, the most learned dissertations upon the improvements of the day.

The situation of the Professorship of Chemistry, it is thought, might be placed on a better footing. At present it is subsidiary in every respect. It is recommended that it be placed on an equality with the independent professorships, and that there be two assistants, one of whom should be the Professor of Mineralogy. The whole course of study as conducted, it is believed, is well fitted to create a fund of information which cannot fail to be of inestimable value to our country in a civil as well as military point of view.

The attention of the Board was directed to the course of Religious instruction. This course is necessarily of vital importance. During the present visitation, the Chaplain to whom this department is entrusted, has been under arrest. There was, therefore no opportunity of witnessing the manner in which the duties belonging to this department are performed. The importance of the duties to be performed by the Chaplain, has induced the Board of Visitors to recommend that the Secretary of War institute an inquiry into the causes which have led to a suspension of the performance of those duties.

With regard to the Internal Police it is entitled to high approbation. The condition of the hospital is fully suited to the object of securing to the Cadets all the comforts and all medical aid that they can require in ordinary cases of indisposition. Clean, well ventilated, and properly attended by nurses, nothing need be added on these heads; recent circumstances, however, have suggested the propriety of enlarging the number of surgical instruments.

The South Barrack, which is the oldest building of the kind at this post, is badly constructed. The rooms are too small, and they are injudiciously disposed. It is recommended that they be rebuilt.

Both barracks present an air of cleanliness and order that reflects credit on all concerned.

The Steward's Hall, where the Cadets mess in common, was visited. It was found that the Cadets are supplied with good and wholesome food.

A building for a Chapel has been commenced; and it is thought will be completed this year.

The Store House is an old and very insecure building, and altogether unfit for the use to which it is applied; a new one is recommended for the safe keeping of the stores deposited there.

The fiscal concerns of the institution were brought to the notice of the Board. The disbursements are found to be made in accordance with the appropriations made, and a system of order and economy prevails. A building for military and other exercises, so requisite for the successful prosecution of military knowledge during the inclement season of the year and to the health of the Cadets, has been commenced under the appropriation for that purpose.

An improvement is recommended in the apartments appropriated to the use of the Chemical Laboratory, Library and Philosophical Apparatus. They are too small and exposed to danger in making chemical experiments.

The teacher of Drawing is entirely destitute of the convenience necessary to the practice, study, and of course improvement in his profession. The building of an apartment for that purpose is recommended, the estimate expense whereof will not exceed eight hundred dollars.

In the accounts of the Treasurer and Quartermaster the expenditure appears to be rigidly confined within the appropriation. The whole fiscal arrangement meets the entire approbation of the Board. The attention that is paid to economy in all the details of the Institution is very satisfactory. There remains in the Treasury an unexpended

balance of the appropriation of last year of eight thousand dollars.

Upon the whole the Board is of opinion that the Institution is well conducted; that the objects to be attained by its continuance are of very great importance to the community. Knowledge is obtainable by means of this Institution which is indispensable to the successful conduct of military affairs. Not only is the knowledge imparted to those educated here, valuable in time of war, but should a state of war be looked upon as remote, the knowledge acquired is scarcely less valuable in time of peace, when applied to the prosecution of the various improvements which are so rapidly developing and enlarging the resources of our country. But the hope that peace shall be perpetual should not be indulged to our detriment. The means most essential to the resistance of aggression should always be within our reach. The humiliating disasters, the waste of life and treasure, that marked the commencement of the late war, for want of a knowledge of what should be deemed the elementary principles in the science of war, are still fresh in the recollection of many. This Institution, it is believed, is well fitted to obviate the recurrence of such calamities, from the same cause. At an expense less than is requisite to keep in commission a frigate of the largest class, knowledge of the science of war, in principle and in practical detail, is imparted to a sufficient number of citizens of our own country, to enable us, in any emergency, to conduct our military operations on a footing of equality with the most skilful enemy. When it is considered that success in war is slightly dependent on either the numbers or courage of the parties, but is most generally the result of the scientific and skilful combinations of causes, the effect of which is foreseen and calculated almost with the precision of a mathematical problem, it would be a source of the most painful reflection, that a country, justly proud of its freedom and liberal institutions, should, for want of appreciating the knowledge necessary to the defence of that freedom and those institutions, permit itself to be placed at the mercy of the enemies of all liberty and liberal institutions. It cannot be denied that those governments most hostile to liberty at the present day, are most ready to appreciate, and to appropriate all the aids that can be derived from science, and applied to the art of war. How important that those countries blessed with freedom should keep themselves on a footing of equality, not in the largeness of their armies, but in the knowledge necessary to the formation of armies, and to direct them, when formed, with efficiency. The knowledge imparted at this institution to the children of our own citizens, selected from every part of the country, is so indispensable to our security, that to dissolve it without providing a substitute possessed of advantages equal or preferable, would seem like retrograding from civilization towards barbarism; and well calculated to endanger our national independence.

(Signed.) P. V. DANIEL,

President of the Board of Visitors.

E. S. DAVIS, South Carolina.  
PETER MARTIN, Alabama.  
JOHN HUNTER, Westchester, N. Y.  
JOHN BRAGG, North Carolina.  
JONATHAN COGSWELL, Connecticut.  
JOHN A. GRAHAM, New York.  
WM. J. LEIPER, Pennsylvania.  
WM. C. FRAZER, Penn.  
THOMAS J. PEW, Kentucky.  
WM. C. LYMAN, Georgia.  
EDWARD H. CARMICHAEL, Va.  
CHARLES C. FERRIS, New York.  
CALVIN BLYTHE, Pennsylvania.  
WM. T. ROGERS, Penn.  
H. ATKINSON, Brig. General U. S. A.

#### SUMMARY.

The venerable JAMES GIBBON, the hero of Stony Point, the respected and honored of all parties, expired at his residence in Richmond, Virginia, on Wednesday morning last, after a lingering illness.

We understand that the President of the United States left this City yesterday, in the Steamboat Columbia, for the Rip-raps, (Fort Calhoun,) where he proposes to recreate and recruit his health for a week or two. [Nat. Intel.]

A letter writer from the White Sulphur Springs of Virginia, states that Major Barry, the Post Mas-

ter General, was a visitor there on the 23d of June, and that he was in very feeble health.

The Norfolk Beacon states that orders have been received at the Navy Yard, Gosport, for the immediate fitting out of the North-Carolina 74.

[From the Globe.]

OFFICIAL.

NAVY DEPARTMENT, 3d July, 1835.

The Board of Examination recently convened at Baltimore, composed of Captains—

HENRY E. BALLARD, President.

A. J. Dallas,

Wm. Compton Bolton,

Alex. Claxton, and

Laurence Kearney,

Members.

has closed its duties.

The following is a list of the Midshipmen who passed, arranged in the order assigned them by the Board:

Class 1827,

M. G. L. Claiborne.

Class 1829.

- |                        |                           |
|------------------------|---------------------------|
| 1 Oliver H. Perry,     | 16 George Wycke,          |
| 2 Charles W. Morris,   | 17 Octavius Fairfax,      |
| 3 Joshua Humphreys,    | 18 T. A. M. Craven,       |
| 4 Richard Bache,       | 19 Dominick Lynch,        |
| 5 Francis E. Barry,    | 20 Francis B. Renshaw,    |
| 6 Joseph Underwood,    | 21 Addison R. Taliaferro, |
| 7 John B. Dale,        | 22 Horace N. Harrison,    |
| 8 Stephen Decatur,     | 23 James H. North,        |
| 9 William L. Maury,    | 24 Robert B. Pegram,      |
| 10 David D. Porter,    | 25 Edward C. Ward,        |
| 11 Edw. C. Bowers,     | 26 Richard G. Cogdell,    |
| 12 Montfort S. Stokes, | 27 Matthew S. Pitcher,    |
| 13 Nathaniel G. Bay,   | 28 James Anderson,        |
| 14 Thomas Budd,        | 29 Charles Thomas.        |
| 15 And. F. V. Gray,    |                           |

FINANCES OF CONNECTICUT.—According to the annual account of the Comptroller of the State of Connecticut, the whole expenditure of the Commonwealth, including Legislature, Judges, State Prison, &c. was last year \$74,015—and the receipts (excluding a balance in the treasury of \$13,443) were \$78,258. The public funds of the State (exclusive of its very large School Fund) are about \$400,000 in bank stock; its public debt about seven hundred dollars!

The Detroit Journal of June 30th, says—It is cheering to state, for the information of our distant friends, that the general health of our city has rarely been surpassed: and never have our streets presented a more gratifying exhibition of business, enterprise, and progressive improvements, than at the present moment.

DIVIDENDS.—The following Marine and Fire Insurance offices made their semi-annual dividends yesterday:

Neptune office	7 per cent.
Ocean " "	6 per cent.
New York " "	5 per cent.
Union " "	3 per cent.
Howard " "	4 per cent.

EFFECTS OF COMBINATIONS.—The Miners Journal states that since the turn out of the Boatmen, we understand that several of the largest shippers of Coal in this region, are making arrangements to have built a sufficient number of boats to carry their own Coal to market.

ROYAL AND NOBLE TRAFFICKERS.—In a recent book of travels, or rather book for travellers, published in England, "The Road-book from London to Naples," the following statements are made:

Near Cumæ is the Lake of Fusaro, where the pleasure of the excursion, to some travellers, finishes with a feast of oysters, for which this lake is famous. It belongs to a very distinguished oystermonger—the King of the two Sicilies—whose agents open the fish and supply the visitors.

They do strange things in this way in Italy. At Rome, the Cardinal Doria used to be the milkman to those who chose to send to his palace for this necessary article to the tea-drinking English; and at Naples, the only good butlerman is his majesty; and those who wish to have this article genuine send to court for it, whence it is issued impressed with the royal arms. His majesty is also the chief, or only dealer in gunpowder, salt, tobacco, &c. &c. &c.

THE LITERARY SOUVENIR FOR 1835, by Maria A. Watts, of which the usual supply was dispatched to this country in the packet ship Sovereign, and shipwrecked, has since been received by Wiley & Long—at least a few copies of it. The engravings, the paper, and getting up of the book—so far as the eye is concerned—and we have had no opportunity for any other examination, are exceedingly attractive.

PROGRESS OF THE ARTS.—The National Academy closed its exhibition of original pictures, by native artists, on the 4th inst.; and it is with satisfaction we learn and record the two encouraging facts—that the receipts from this exhibition exceeded by a thousand dollars those of any previous one—and that, with very few exceptions, every picture that was on sale, was bought at the artist's own prices. Among them were three by MOUNT—the *Sleepy Hollow*, by COLE—and several others. This result is both gratifying and encouraging.

In an account of the present exhibition at Somerset House, we find these notices of two pictures, which may be called American. The one from its subject *Columbus*, the other from its artist *Leslie*.

"Christopher Columbus explaining the project of his intended voyage for the discovery of the New World, in the convent of La Rabida." D. Wilkie, R. A.

"A stranger travelling on foot, accompanied by a young boy, stopped one day at the gate of a convent of Franciscan friars, dedicated to Santa Maria de Rabida, and asked of the porter a little bread and water for his child: while receiving this humble refreshment, the guardian of the convent, friar Juan Perez de Marchena, happening to pass by, was struck with the appearance of the stranger, and observing from his air and accent that he was a foreigner, entered into conversation with him." That stranger was Columbus.

"The conference which followed was remarkable for opening a brighter prospect in the fortunes of Columbus, and forms the subject of the picture in which he is represented seated at the convent table, with the prior on his right, to whom he is explaining, on a chart, the theory upon which his long contemplated discovery is founded. At his left is his son Diego, with a small Italian greyhound at his feet, supposed to have accompanied them in their voyage from Genoa.

"At the other side of the picture, resting on the table, is the physician of Palos, Garcia Fernandez, who from scientific knowledge, approved of the enterprise, and whose testimony has recorded this event. Behind him, with the telescope in hand, is Martin Alonzo Pinzona, one of the most intelligent sea captains of his day."

Such is the subject of the picture, and it may be considered the triumph of Wilkie's in the present exhibition, and one that ranks very high in art.—The expression of Columbus is truly noble and intelligent, dignity and mildness are in every lineament. At the left of Columbus is his son Diego, holding a small Italian greyhound, which reclines at his feet. In the back ground is introduced the head of Pinzona, whose expressive eye denotes the suppressed jealousy lurking in his bosom, at the same time giving a reluctant approbation to the plan of the great navigator. The other characters are all in accordance with the subject, and as far as conception in color and composition extend, this picture may rank among the grand historical, and be classed among the finest productions of the British school.

"Gulliver's Introduction to the Queen of Brobdingnag." C. R. Leslie, R. A.—This picture represents the point of time when the little Gulliver is presented to the gigantic Queen of the Brobdingnagians, surrounded by her maids of honor. The captain in the back ground is receiving the money which the Queen pays for the purchase of the diminutive curiosity. Gulliver is on the table embracing with fervent devotion the tip of her Majesty's little finger. We think the whole of this picture is a misconception. The artist has not conquered the difficulty with which the subject evidently labors, namely, to make the women Brobdingnagians without making a Lillipution of Gulliver. As a painting it has the usual superior style of this artist's masterly touch and freedom of execution.

cution, with great harmony of coloring—but still we must confess the representing Gulliver among the Brobdignagians is quite a failure.

#### ROYAL ASSOCIATE IN THE TEMPERANCE CAUSE.

—We find it stated in the Paris papers of 8th May, that Bernadotte, king of Sweden, had become a member of the Temperance Society at Stockholm. According to the regulations of that Society, when a man becomes a sot, his name is posted up at the church doors, and prayers are offered up by the congregation for his reform.

Should not the N. Y. State Temperance Society—that "moral colossus," as we have seen it happily called—elect this King who thus, the first of his order, lends the influence of high name and station to such a cause, an honorary member?

The Nashville papers state that the United States Bank has ordered the office in that place to collect its old debts by the 4th day of March next, and to close its new business, founded on bills to be drawn on New Orleans, in anticipation of the growing crop, within six months from the first day of November next, thereby to enable the Parent Bank to withdraw its office from Nashville by the first day of May.

The committee appointed to ascertain the damage done by the Tornado in the village of Piscataway, New Jersey, report the amount at five thousand and fifty dollars. This is a very heavy loss for such a place.

[From the Lynchburg Virginian of Thursday last.]

**THE STORM.**—It is impossible to give any thing like a minute and detailed account of the ravages of the furious and destructive storm, with which we were visited on Saturday afternoon, 27th June. Our information from the country is entirely too partial and limited to admit of it. We have learned, however, that its first traces are discernible on the farms near the base of the Peaks of Otter, in Bedford county, (some 18 or 20 miles west of this place,) though in that immediate neighborhood the damage is comparatively trivial. Progressing eastwardly, with occasional deviations from a direct line, and gathering violence as they rolled onward, the clouds poured forth, from apparently inexhaustible magazines, showers of hail stones—or, more properly speaking, masses of ice,—stripping the orchards of their fruits, and the gardens of their vegetables—beating down the promising fields of corn level with the earth, the stalks mashed into a jelly and the fodder torn into shreds—sweeping off the wheat, rye and oats, as if the scythe of the reaper had passed over the fields, and scattering abroad the nearly ripened grain, as if the processes of cutting and threshing had been a simultaneous work. In one word, the entire strip of country which was within the track of the storm—supposed to be a mile and a half in width, and probably from fifty to sixty miles in length—exhibits a most distressing scene of desolation and ruin.

In Lynchburg, all were sufferers, more or less. The gardens, many of which were highly cultivated, are entirely destroyed, with the exception of the few vegetables,—potatoes, onions and beets,—which were in a measure screened from the fury of the tempest by their subterranean mode of cultivation. Nearly every house in town lost a portion of its window glass.—It is supposed that not less than 15 to 20,000 panes were shattered. A few chimneys were blown down, several dilapidated out-buildings prostrated, and many trees uprooted. Fortunately, however, no lives were lost, though several persons received severe contusions and bruises. Thousands of birds and domestic fowls were killed, and the trees in the forests and yards, in which the feathered tribe sought shelter, were divested of the greater portion of their foliage, and even their bark peeled off, as though they had been subjected to a moderate cannonade. The amount of damage done in this place and its immediate neighborhood cannot, of course, be at present estimated, with any thing like precision. It may, however, be safely stated at \$100,000—and we should not deem double that sum an extravagant estimate.

We can truly say that we never before beheld a

scene so awfully sublime and terrific as that presented by this storm, both in its approach and in its progress. There was but little thunder or lightning, but the descent of the hail was preceded, for several minutes, by a monotonous rumbling sound, resembling the bass tones of distant thunder, or the deep roll of the muffled drum—and reminding us of the ominous notes which precede the earthquake, apprising the unhappy victims of approaching death, too late to enable them to avail themselves of the warning. The clouds wore an unnatural aspect, tinged with a greenish hue, and rolling and pitching in the "void immense" with startling velocity and fury. Luckily, however, the wind was comparatively mild, except for a very brief space, when it exhibited that angry whirl, in which its tremendous power is most fearfully displayed. During that brief space the "war of the elements" so completely wrapped the largest objects in obscurity, that a house, within a few paces, was totally lost to sight.

**JOICE HETH.**—A negro slave is now exhibiting in this city, at the Washington Coffee House, who has attained the extraordinary age of 161 years. A visit which we paid her yesterday, has removed whatever doubts we may have previously entertained as to the facts confirmatory of this extraordinary instance of longevity—and of which we expressed our doubts some weeks since, when we saw the fact mentioned in a Cincinnati paper. She is certainly a curiosity, and is what we hardly supposed ourselves, a very agreeable and interesting sight. And what is very remarkable, she retains a vivid recollection of the scenes of her youth. As the proprietor is on his way to Philadelphia, his stay here will be short, consequently those who wish to avail themselves of the sight of a being who was living more than one hundred years previous to the revolution, should do so immediately. The proprietor is very attentive, and renders to the visitors every satisfaction.—[Pittsburg Adv.]

**TRINITY CHURCH, RICHMOND.**—The citizens of Richmond, Va., have already subscribed nine thousand dollars towards rebuilding Trinity Church, recently destroyed by fire in that town.

**BANK NOTE ENGRAVING.**—We have before us, a note designed for the Union Bank of this city, from a plate engraved by Messrs. Casilear, Durand, Burton & Edmonds, of this city, which strikes us as of the highest finish and execution. The female figures on the sides, and the lettering in the body of the note, are capital.

\*There are six India Rubber Manufacturing Companies chartered by the Legislature of Massachusetts—capital from \$50,000 to \$100,000.

[From the Boston Atlas of Yesterday.]

The elegant steam packet Independence, destined for the Eastern route, arrived yesterday at 10 o'clock, in 30 hours from New York. Her burthen is 473 tons, and her accommodations for passengers, and furniture, are of the first quality. We are informed she will commence running to Bangor on Tuesday next. She can take out fourteen hundred people with safety.

**ISLAND OF CUBA.**—We have extracted from Havana papers the following official statement showing the imports, exports, and revenue of the Island of Cuba in the year 1834.

Imports,	\$18,563,300
Exports,	14,487,955
Imports from the U. States	
both in Spanish and American bottoms,	3,240,680
Exports to the U. States,	4,694,364

The number of Spanish and foreign vessels which visited the ports of the Island in 1832, amounted to 2026—797 of which were Spanish, 945 from the United States, 113 English, 58 French, and the remainder belonged to various European nations.

The tonnage of all these vessels amounted to 300,000 tons.

#### Revenue of the Island.

Duties on imported and exported goods,	\$5,200,000
Taxes and other sources of revenue,	4,965,000

Total revenue, \$10,165,000

The Treasury of Havana, after meeting all the expenses of the civil list, providing for the mainte-

nance of an army of 20,000 men, and sending two millions and odd dollars to the mother country, had, on the 1st of January last, a balance on hand of \$644,000.

It is expected that the enlightened views of the present Spanish Government with regard to the free trade of the Island, and the suppression of various burthens which now check the progress of agriculture, will contribute towards developing still more the great natural resources of this Island.—[Cour. & Enq.]

**FROM MEXICO.**—The New Orleans True American of the 18th ult. contains the following:

The news from Mexico was brought yesterday by the brig Bebis, from Vera Cruz. The dates she brings from the city of Mexico, are up to the 20th May. Peace has been re-established throughout the states. Rejoicings and festivals are taking place in every town of the whole Mexican Union in honor of the late Triumph of Santa Anna. The Mexican Congress of the 23d, decreed to that successful chief, the title of "Saviour of the Nation." A monument is also to be erected in honor to him on the field of his victory. His next title will probably be that of Emperor, and the next gift made to him—a crown!

**FROM CANTON.**—By an arrival at Boston we have Canton papers to February 17. Later marine advices have been received via Philadelphia. The following are extracts from the papers:—

**Destruction of St. Paul's Church at Macao.**—On the night of the 26th inst., this ancient and superb edifice was totally destroyed by fire. From its conspicuous situation, standing on almost the highest ground within the walls of Macao, the grand and awful sight of the blazing pile was visible to the whole city. The fire originated in the guard house, which was a part of the building, and occupied by soldiers. The church was built by the jesuits in 1602. We hope to see a full account of this melancholy event in the next Chronicle of Macao.

[From the Daily Advertiser.]

**NEWS FROM THE OTHER SIDE OF THE GLOBE.**—We have received very copious files of papers from Sydney, in New South Wales, better known by Botany Bay. We have been exceedingly amused and instructed at the contents of these journals.—One of the files, "The Sydney Gazette," has been established thirty-two years, and its number is 2448, in size and workmanship in no way inferior to the largest New York journals, and the talent with which it is conducted is of a high order. We have made a synopsis of the intelligence, which, although not late and important which usually graces the head of a foreign arrival, is nevertheless quite interesting.

No less than 14 vessels are now loading for London and Liverpool, in this port, and two at the Hunter. The cargoes will, of course, consist of colonial produce, and principally wool and oil.—[Ed. Syd. Gaz.]

A mechanic, of some experience, is preparing a Diorama for exhibition, in Sydney. It will embrace a view from Botany Bay to the Heads, the harbor of Port Jackson, and the principal parts of the town.

On Saturday last, seven or eight publicans were fined at the Police Office, the sum of 40s. and costs, for selling liquors in their houses on Sundays.

A meeting of the friends of Chaulker, the Champion, and Tom Crawley, took place at the Custom-House Inn, last evening, when 7000 a-side was made good. Time and place in due season.

Yesterday, being St. Catherine's day, the rope-makers in Sydney showed their respect to their patron Saint, by abstaining from work; indeed, towards the latter part of the day, some of them were in a state not quite consonant with the rules of the Temperance Society.

The Cape Packet, (Captain Hindson,) which returned from the whaling grounds on Sunday last, with a full cargo of sperm oil, may be counted one of the most, if not the most, fortunate vessels that ever left Sydney—having been absent only sixteen months. On her previous voyage, under the command of the same gentleman,

she was still more fortunate, having returned to port as full as an egg, only twelve months out; during which time she never once dropped her anchor. The Cape Packet has also had the good fortune to obtain a considerable quantity of ambergris, which is so precious at home.

Mr. John T. Wilson, with a view (we are persuaded) to advance the interests of Australia, more than from any motive of personal aggrandizement has ordered a superb steam vessel of 200 horse power, which is to ply between this and Robert Town, and she may be expected to arrive in the waters of Port Jackson within three months of this date.

We understand that a large quantity of wool will be sold this season at Mr. Lyon's wool mart, in George street. A number of the settlers, it seems, prefer disposing of their clip in the colony, to taking the risk of shipping it, and awaiting the necessary delay before they can obtain returns. In our opinion it must be a very great advantage to those with whom cash in an immediate object, to be enabled to avail themselves of the very liberal terms upon which Mr. Lyons undertakes to receive wools for sale; and we are, therefore, not surprised to learn that the supplies of that article are likely to be very abundant. Although we may expect that the wool of this colony will always continue to maintain a high character in the English market, yet we do not think that the prices of one year should be taken as the standard of another. Like the price of every other article of commerce, that of wool may be expected occasionally to fluctuate, from various causes; and we do not consider it at all unlikely that the holders of wool may, now and then obtain higher prices here than the same article will afterwards realize at home.

A small quantity of gooseberries were on sale at the Market on Tuesday, at one shilling and sixpence per quart; some cherries at 3s. per lb. were also on sale. This is the first year, we believe, that gooseberries have been exposed for sale in the Market. Upwards of three thousand bushels of maize were exported to Hobart Town last week, by the ships New York Packet and Ellen.

The Henry Porcher was about to sail for Sydney with male prisoners.

The Isabella will proceed forthwith to Norfolk Island with prisoners and stores.

The steamboat Tamar is nearly fitted up. We understand that she will make an experiment trip to George Town, and immediately afterwards be sent to Sydney for sale, where it is expected she will bring a good price. It is said that 1500 pounds a year has been offered the proprietors, by persons there, for the hire of this vessel.

George Reynolds, publican, was fined 40s. and costs, for suffering persons to sit and drink in his house on Sunday last, against the act.

Thomas Smidmore was fined 40s. and costs for the same, and several other cases of the like nature were decided.

Mary Ann Clark exhibited in the stocks two hours this morning, for being drunk and not being prepared with the needful.

We understand that the Polish gentleman lately arrived in Sydney, intends giving a series of concerts.—A meeting of the share holders have unanimously appointed Mr. W. T. Cape, as conductor of the Sydney College.

On Monday last there were thirteen wool teams between the Sydney turnpike and the fifth mile stone. Other thirteen teams were counted between that place and Liverpool. Thirteen, it is well known, is the Devil's dozen; but in this case that old gentleman had no reason to say as he said when shaving the pig—"more cry than wool."—A Mr. Benjamin Kirby was fined on Friday last, in the sum of 4l., on a charge of furiously riding through Cumberland street.

The "British Sovereign" took in her last bale of wool on Saturday, and expected to clear out for London this day—Thirty prisoners of the crown, principally cattle stealers, were forwarded to Norfolk Island, per sch. Isabella.

THE GREAT NATION.—We apprehend the United States may now be called the "Great Nation;" and as the people of that rapidly rising republic are the descendants of Britain, speaking the same language, and governed upon principles so truly congenial to Britons, we consider the arrival of an American ship here at all times a subject of gratulation.

[From the Southern Patriot.]

### Shipwreck of the Children of Henry the 1st, of England.

MR. EDITOR,—The details of the following interesting narrative are given we believe for the first time, in an English dress to the public. It is compiled in part from an old Chronicle contemporaneous with the period of which it treats, and from an ancient record deposited in the Abby of Fontevault. History is silent as to these details, it merely relates the fact, that the Children of Henry the 1st, with a considerable body of the most illustrious persons of the realm, were lost on the passage from Normandy to England. We are therefore indebted to the industry of the Ancient Chroniclers for the relation of an event full of incidents of a most affecting and interesting character. The translation is from the pen of one of the young ladies at Madame Hery's Institution, who has upon more occasions than the present, introduced to the lovers of literature, gems of rare merit, and given exercise in this manner to powers of mind, which erst might have remained unknown, even to their fair possessor.

"The close of the year 1120, also saw the close of a long and sanguinary war, which was waged between Henry the 1st, King of England, and Louis Le Gros of France. The peace which the Belligerents then concluded, guaranteed to the English Monarch the undisputed possession of the fertile Duchy of Normandy, while on the other hand, a marriage which his son William, the heir of his throne, consummated with the beautiful Matilda of Anjou, also secured to him this rich and populous province. Thus his power was augmented, and ambition itself seemed satisfied. He saw himself master of England, and he gave law to a large portion of France. He was in the zenith of his power and glory, and he made preparation to return to Albion, surrounded with such symbols of splendor and glory, as were indeed well calculated to exhibit the march of the conqueror, and the triumphs worthy of a king.

He was accompanied in his journey from the interior to the coast of France by his family, and a numerous host of his chivalry having arrived at Barfleur in Normandy, he found several vessels, all anxious for the honor of conveying him to his paternal dominions.

When about to embark, he was accosted by a Mariner by name Thomas, who having approached the King presented him with a handsome gift, and thus addressed him: "Sire, my name is Thomas the pilot, and my father Stephen also followed the same occupation; he has served your Majesty well and long. When William the Conqueror sailed from this port, it was he who conducted the ship which bore your illustrious father across the sea; he fought under his banner; he aided him in the conflict, and under the blessing of heaven helped to achieve the victory. Permit me then, oh gracious King, to have the same post, which the good King William bestowed upon my father. I have at your royal service a brave ship, she is stout, newly built, and manned by fifty vigorous and expert seamen." The King answered him, "Friend, I have already chosen a ship and cannot change it; but in order to testify our sense of your loyalty, and of the fidelity of your family to our royal house, we will confide to you the charge of transporting to our kingdom, our two sons William and Richard, and our dearest daughter Adèle. Guard them as you would ourselves; they are dearer to us than our life! You will likewise have a number of our principal Nobility and Courtiers, and the bulk of my treasure; go now, be vigilant and be careful!"

The gallant bark, which carried the Monarch of Britain, shortly after got under weigh. She is soon out of sight, and reached Northampton in safety early next morning.

The *Le Blanche Nef*, unhappily remained behind, the sailors overjoyed at their good fortune, in having so rich a freight, gave themselves up to all kinds of merriment and to expressions of extravagant joy, unfortunately a large quantity of Wine was distributed amongst them. They surround the young Princes, and testify their attachment and their pleasure, by dancing and singing. At length the Princes retire to rest, but the revelry and mirth continued on deck for some time after.

The signal for departure is given, and the ill-fated vessel is seen at last to sail. She shoots like an arrow through the water. She grows less and less distinct, and is lost at length in the receding dis-

tance. Besides the two Princes and their sister Adèle, she had likewise on board as passengers 18 ladies of the Court, the wives or daughters of the most considerable of the Nobles, and learned men, and other distinguished persons, 104 Barons and Chevaliers, the flower of the armies of Normandy and England, in all about 300 persons.

There were many, however, more provident and wise, who absolutely refused to embark in the *Le Blanche Nef*—they would not consent to commit their lives to the keeping of men, who were either insensible to the calls of duty, and seemed deprived of their reason—who, said the historian, instead of attending to the adjusting of the sails and the trimming of the ship, listlessly lolled upon the benches or took possession of the coffers that incumbered the deck.

At the given signal she starts with ardor from the quay,—the *Le Blanche Nef* recedes rapidly from the shore, amidst the acclamations of the people; but in the moment of entering the bay of Cate, now Gatteville, whilst the rowers, in a state of complete intoxication, employed all their strength to overtake the King, (which they made it a point of honor to do,) the left side of their ship struck against a rock with such force, that the sea immediately entered, and covered a great part thereof. The rock was called *Quilleboeuf*, the summit of it was round, and white, and could be seen at the ebbing of the tide. A cry of distress was uttered at the same moment from all the passengers. It rose over the waters, it was heard on the shore—but no succor came; because none could divine its cause. Dismay took possession of every mind, the stoutest heart was appalled, darkness brooded over the scene, and the utmost confusion prevailed on board. Thomas the Pilot, the ill starred author of this great disaster, sought for the Princes,—he hurries them into a boat, he is about to hasten from the scene of distress, when the young Adèle standing on the deck, perceiving them, cries out, "oh! my brothers will you abandon me," at these words Prince William forgetful of the danger of venturing with a small launch to a vessel crowded with so many persons, held out his trembling arms towards his sister, and approaches her! On the instant, the whole crew precipitate themselves into his full bark, and it sunk with the ship—all disappeared with the bark!—but two men, one a young Knight, son of Geoffrey de le Aigle, the other a Butcher of Rouen named Berold—these kept themselves above the water by holding on to one of the masts. Thomas the Pilot re-appeared for a moment above the water, he sees these two persons, his strength and reason appeared renewed, "Are the King's sons safe?" "They are lost with the others" was the answer he received. Oh woe! is me cried the Pilot, and he sunk forever beneath the waves. It was one of those dreary, dark and cold nights of November—when the weather was calm, and the sea was serene. Scarcely a ripple disturbed the bright, the deep and awful solitude that now brooded over its bosom, the moon shone forth in cloudless splendor and revealed to the sufferers the full extent of their danger; they gave up all hopes of safety and committed themselves to the care of God! In vain they cast their eyes to the shore; in vain they lift their voices for assistance, the one is lost in immeasurable space, the other is drowned amidst the deep murmurs of a boundless ocean.—Mysterious Providence! unsearchable are thy ways! how different was the fate that awaited these unhappy men. By a strange destiny made equals in misfortune, they for some time bravely combat with their fate; companions in peril, they encourage each other by the most kind and affectionate words; united by the ties of calamity, the Butcher is now engaged in cheering on his fainting friend, and again the young Count, with the heroism becoming his blood essays the like kind offices to his humble but faithful attendant. But who can resist the power of fate. The youthful heir of Geoffrey is seen to sink, he yields to the pressure of woe: his constitution being more delicate, and his limbs less vigorous than those of the peasant Berold, become exhausted; his strength fails him, his hands are benumbed with cold, and letting go that wood which he is no longer able to grasp, he abandons himself to the sea. With a prayer to God for the salvation of his soul, and for the safety of his companion, he sinks beneath the water, one sigh from the victim, one single murmur from the passing wave, and all was over for the high hopes of a devoted mother.

The Butcher of Rouen, of all that lofty and gallant host alone escaped—to relate these details to

the Chroniclers of Fontervault, for the information of posterity. Some fishermen passing that way, clad in sheep skins, the dress at that time of their class and country, heard his moans and came to his assistance. They brought him to land, and resuscitated him with cordials and by their hospitality. On the next day, the sea cast on the coast of Barfleur, the bodies of the shipwrecked passengers.

In the mean time Henry, ignorant of the events of that terrible night, waited impatiently for their arrival. He was alternately the subject of hope, and the victim of anxiety and expectation, the fatal news was spread by evening. But who would undertake to inform the miserable King, the wretched Father, of the frightful affliction? Who would break to him the revelation of a catastrophe, that must for ever plunge him into the dark abyss of suffering and of woe? All those around him, were partners in his grief; each had to mourn over a dear relation or a cherished friend. They employed a child, who, casting itself at the feet of the Sovereign, told him all. Ah! who now can tell the father's grief? who now will paint the parent's heart? Henry fell to the earth pierced with anguish. His gallant sons dead! his beautiful Adelé no more! He turned in disgust from glory, his hopes were blighted, the sunshine of his life was gone, and a dark night of gloom closed over him for ever. His children were snatched from him by the tyrant in the very hour of happiness, of triumph, and of honor. He shed not a tear for many days; he abandoned himself to despair; he called upon his children by name, and he would chide them for their delay. He would then awaken to his loss; tears came to his relief, and in this mood he would find an alleviation of his pain in dwelling upon their virtues and their many good qualities. He would frequently recur, also, to the brave men who perished with them, and seemed to experience a melancholy pleasure in recounting their heroic deeds, and in the relation of acts of valor which made his Knights the flower of Chivalry, and illustrious before the armies of Europe. From that terrible day, continues the ancient MS., Henry the First of England, one of the greatest monarchs in Christendom, was never seen to smile.

Prince William was 16 years of age when he married Matilda, heiress of Anjou. She was then about 14, lovely and endowed with a mind, cultivated with care by the good monks, who followed a life of piety and letters under the protection of her father. She was in the vessel with the king, her father-in-law, and thus escaped the misfortunes of her husband. They had been married but a few days.

The young Princess was pierced with grief that was inconsolable when she heard of her husband's death. She mourned over his fate and refused to be comforted; they were so lovely, so united and so young. Alas! she was indeed an object of compassion and tender pity. In a very short time after these events took place, Matilda returned to her father, but the seductions of a Court had no charms for a wounded spirit, and finding that the brilliant circles of the gay and the refined, only increased the bitterness of her regrets, he consented at length to her entering into the Abbey of Fontervault, where she spent the rest of her days, if not happy, at least tranquil and resigned; her time was employed in acts of usefulness, of virtue, and in prayer. After due season she took the veil, and became the second Abbess of that celebrated institution, and by the gentle charities which she diffused around her, and the odour arising from a life of sanctity and good example, by innumerable acts of benevolence and humanity, and by the performance of other good works, she was so esteemed, so revered, and so beloved, that to the poor of her neighborhood she became indeed a second mother, and was regarded in the light of a Guardian Angel.

"The Countess de Provence to her Husband.—Chanson  
Vouge m'semblait del corals amadors.

I fain would think thou hast a heart,  
Although it thus its thoughts conceal,  
Which would could bear a tender part  
In all the fondness that I feel:  
Alas! that thou wouldst let me know,  
And end at once my doubts and woe!

It might be well that once I seem'd  
To check the love I priz'd so dear,  
But now my coldness is redeem'd,  
And what is left for thee to fear?  
Thou dost to both a cruel wrong,  
Shouldst dread in mutual love be known?  
Why let my heart lament so long,  
And fall to chain what is thine own?"

La Gantille Marguerite, the unhappy wife of Louis the Eleventh, when dying broken-hearted, in consequence of the cruel treatment of her husband, on being comforted by one of her attendants, who spoke of hope and life, exclaimed, as she turned away in despair, "Fi de la vie—ne m'en parlez plus,"—and expired.

The following lines are in illustration of the exclamation of that beautiful and wretched queen:—

Oh! speak to me of life no more!  
Its lurid star will soon decline,  
Soon will its miseries be o'er,  
Its pleasures never have been mine.

Out upon life! oh, if to live,  
As I so long have done,  
Is all this niggard world can give,  
'Tis well my sand is run.

Why should I shrink, or why delay?  
The future cannot show  
Ought that can charm my soul to stay,  
Or bid me sigh to go.

Out upon life! it might have given  
A lot from sorrow free—  
It might have shone with hues of heaven,  
But they were not for me!

This heart was fond, this heart was true,  
But wither'd, torn, oppress'd,  
It could not now its pulse renew,  
Or warm this tortured breast.

What has it now with life to do,  
So changed from what it was of yore?  
The world is fading from my view,  
Oh! speak to me of life no more!

#### PARTNER WANTED.

Wanted, a partner in an extensive Printing Establishment. No one need apply who is not a thoroughbred printer, competent to superintend and direct an office in which upwards of 30 persons are employed, and able to furnish \$3000 cash capital. The best of references will be given and required. Letters, with real name, may be addressed to P. P. P. Post Office, New-York, postage paid, and they will be promptly attended to. May-17

#### TO TUNNEL MINERS, DRILLERS, &c.

Wanted, immediately, 40 Tunnel Miners, (Cornish Miners will be preferred), 80 Drillers, 50 Laborers, and two experienced Mine Blacksmiths, on the New York and Harlem Railroad, about five miles from the City. Liberal wages will be given, and cash payments made every fortnight. Apply at Mr. FOWLER'S, St. John's Hall, Frankfort street, New-York.

JOHN RUTTER, Contractor.

The Albany Argus, Philadelphia U. S. Gazette and Pennsylvania, will please copy this, and send their bills to the Railroad Company, 14 Wall street, New-York. 23-17

#### RAILROAD IRON.

500 Tons Railroad Iron, 2 inch by 1/2, with Spikes and Spiking Plates to match, for sale by  
WM. G. BULL & CO.  
26-37p 74 Wall-st.

#### RAILROAD CASTINGS.

MANY & WARD, Proprietors of the Albany Eagle Air Furnace and Machine Shop, will make to order car wheels, chairs and knees, and every other description of castings required for railroads. R-17 feb 14

#### PATENT HAMMERED SHIP, BOAT, AND RAILROAD SPIKES.

Railroad Spikes of every description required, made at the Albany Spike Factory. Spikes made at the above Factory are recommended to be public as superior to any thing of the kind now in use. Ship and Boat Spikes made full size under the head, so as not to admit water. Orders may be addressed to Messrs. ERASTUS CORNING & CO., Albany, or to THOMAS TURNER, at the Factory, Troy, N. Y. sept. 13-17

#### PATENT RAILROAD, SHIP AND BOAT SPIKES.

The Troy Iron and Nail Factory keeps constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years successful operation and now almost universal use in the United States (as well as England, where the subscriber obtained a Patent,) are found superior to any ever offered in market.

Railroad Companies may be supplied with Spikes having countersink heads suitable to the holes in iron rails, to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

All orders directed to the Agent, Troy, N. Y., will be punctually attended to.

HENRY BURDEN, Agent.

Troy, N. Y. July, 1831.

Spikes are kept for sale, at factory prices, by I. & J. Townsend, Albany, and the principal Iron Merchants in Albany and Troy; J. I. Brower, 232 Water street, New-York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

F. S.—Railroad Companies would do well to forward their orders as early as practicable, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes.

1322am

H. BURDEN.

#### STEPHENSON,

Builder of a superior style of Passenger Cars for Railroad,  
No. 264 Elizabeth street, near Bleecker street,  
New-York.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlem Railroad now in operation. J361f

#### RAILROAD CAR WHEELS AND BOXES, AND OTHER RAILROAD CASTINGS.

Also, AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to.

Also, CAR SPRINGS.

Also, Flange Tires turned complete.

J8 ROGERS, KETCHUM & GROSVENOR

#### RAILWAY IRON.

95 tons of 1 inch by 1/2 inch, Flat Bars in lengths 200 do. 1 1/2 do. 14 to 15 feet, counter sunk 40 do. 1 1/2 do. holes, end cut at an angle 800 do. 2 do. of 45 degrees, with splicing plates and nails to 800 do. 3/4 do. suit soon expected.

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

Wrought Iron Rims of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels.

Axles of 2 1/2, 3, 3 1/2, 3 3/4, and 4 inches diameter for Railway Cars and Locomotives of patent iron.

The above will be sold free of duty, to State Governments and Incorporated Governments, and the Drawback taken in part payment. A. & G. RALSTON, 9 South Front street, Philadelphia. Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use both in this country and Great Britain, will be exhibited to those disposed to examine them. d7meowr

#### SURVEYORS' INSTRUMENTS.

Compasses of various sizes and of superior quality warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by

E. & G. W. BLUNT, 154 Water street, corner of Maiden lane.

J31 6t

#### SURVEYING AND ENGINEERING INSTRUMENTS.

The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new, among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also a Railroad Goniometer, with two Telescopes—and a Leveling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,

Mathematical Instrument Maker,  
No. 9 Dock st., Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested. Baltimore, 1832.

In reply to their inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad, I cheerfully furnish thee the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sight, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,

JAMES F. STABLER, Sup't of Construction  
of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors.

E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY B. CAMPBELL, Eng. Philad.  
Germant. and Norrist. Railroad

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